Government
Publications

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SESSIONAL PAPERS.

VOL. XXIII.—PART VIII.

FIRST SESSION OF SEVENTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1891.

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LIST OF SESSIONAL PAPERS.

ARRANGED ALPHABETICALLY.

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Agricultural Societies, Analysis	41	*Not printed*
Agricultural text book, Order in Council	32	"
Algoma, leases of lands in	56	"
Asylums, Report	6	*Printed.*
Bee-keepers' Association, Report	66	*Printed.*
Births, Marriages and Deaths, Report	3	"
Blind Institute, Report	9	"
Canadian Institute, Report	21	*Printed.*
Common Gaols, Report	7	"
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Davis, Judge, Surrogate Fees to	22	*Not printed.*
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Factories, Report	60	*Printed.*
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Keewatin Lumber Co'y., lease to	56	*Not printed.*
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Text Books, publication	39	*Not printed.*
Timber berths under license	46	*Printed.*
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Titles, Master of, Report	50	*Printed.*
Toms, Judge, Order in Council	43	*Not printed.*
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LIST OF SESSIONAL PAPERS.

Arranged in Numerical Order, with their titles at full length; the Dates when Ordered and when Presented to the Legislature; the name of the Member who moved for the same, and whether Ordered to be Printed or not.

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No. 1.. Return from the Records of the General Election to the Legislative Assembly in 1890, shewing:—(1) The number of Votes polled for each Candidate in each Electoral District in which there was a contest. (2) The majority whereby each successful Candidate was returned. (3) The total number of Votes polled in each District. (4) The number of Votes remaining unpolled. (5) The number of names on the Voters' List in each District. (6) The population of each District as shewn by the last Census. (7) Similar Statements as to any Elections held since the General Elections. Presented to the Legislature, 12th February, 1891. (*Printed.*)

No. 2.. Detailed Report of the Inspector of Insurance for the year ending 31st Decem- 1889. Presented to the Legislature March 10th, 1891. (*Printed.*)

No. 3.. Report of the Registrar-General, relating to the Registration of Births, Marriages and Deaths for the year 1889. Presented to the Legislature 22nd April, 1891. (*Printed.*)

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No. 4.. Report of the Minister of Education for the year 1890, with the Statistics of 1889, in which is included the Reports upon the Scientific Societies, Toronto University, School of Practical Science and Upper Canada College. Presented to the Legislature 13th March, 1891. (*Printed.*)

No. 5.. Report of the Council of the Agriculture and Arts Association for the year 1890. Presented to the Legislature 10th April, 1891. (*Printed.*)

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No. 6.. Report upon the Lunatic and Idiotic Asylums for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 7.. Report upon the Common Gaols, Prisons and Reformatories of the Province, for the year ending 30th September, 1890. Presented to the Legislature 3rd April, 1891. (*Printed.*)

No. 8.. Report upon the Institution for the education of the Deaf and Dumb, Belleville, for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 9.. Report upon the Institution for the instruction of the Blind, Brantford, for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 10.. Report upon the Hospitals of the Province for the year ending 30th September, 1890. Presented to the Legislature 10th April, 1891. (*Printed.*)

No. 11.. Report upon the Houses of Refuge and Orphan and Magdalen Asylums for the year ending 30th September, 1890. Presented to the Legislature 20th April, 1891. (*Printed.*)

No. 12.. Report of the Fruit Growers Association for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 13.. Report upon the working of the Tavern and Shop Licenses Acts for the year 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

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No. 14.. Statements of the Bursar of Upper Canada College, of cash transactions, for the year ending 30th June, 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 15.. Report of the Entomological Society of Ontario for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 16.. Report on Forestry, 1889-90. Presented to the Legislature 24th March, 1891. (*Printed.*)

No. 17.. Report of the Commissioner of Public Works for the year 1890. Presented to the Legislature 11th March, 1891. (*Printed.*)

No. 18.. Report of the Commission appointed to enquire into the Prison and Reformatory system of the Province. Presented to the Legislature 30th April, 1891. (*Printed.*)

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No. 19.. Public Accounts of the Province for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No 20.. Estimates for the service of the Province until the Estimates for the year are finally passed. Presented to the Legislature 12th February, 1891. (*Not printed.*) Estimates for the year 1891. Presented to the Legislature 23rd March, 1891. (*Printed.*) Estimates for the service of the Province until the Estimates for the year are finally passed. Presented to the Legislature 31st March, 1891. (*Not printed.*) Supplementary Estimates for the year 1891. Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 21.. Report of the Canadian Institute, 1890-91. Presented to the Legislature 3rd April, 1891. (*Printed.*)

No. 22.. Copy of an Order of His Honour the Lieutenant-Governor in Council respecting the payment of Surrogate Court Fees to His Honour Judge Davis under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 23.. Return from the Queen's Printer as to the disposal of the Sessional Statutes. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 24.. Statement from the Queen's Printer as to the disposal of the Revised Statutes. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 25.. Copy of an Order in Council respecting the payment of Surrogate Court fees to His Honour Judge Muir, under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 26.. Copy of an Order in Council approving of an agreement with the Rose Publishing Company for the publication of a High School French Reader. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 27.. Copy of an Order in Council raising the High School of Morrisburg to the standing of a Collegiate Institute. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 28.. Copy of an Order in Council raising the High School at Aylmer to the standing of a Collegiate Institute. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 29.. Copy of an Order in Council approving of a By-law of the County of Simcoe, establishing a High School at the Town of Gravenhurst. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 30.. Copy of an Order in Council conveying to Thomas Maitland Grover, certain land in the Village of Norwood in exchange for other lands conveyed by him to the Board of Education of Norwood. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 31.. Copy of an Order in Council conveying to the North American Land Company, Limited, certain lands at one time vested in the Toronto Collegiate Institute Board in trust, but surrendered to Her Majesty. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 32.. Copy of an order in Council approving of an agreement with the J. E. Bryant Company, Limited, for the publication of an agricultural text-book. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 33.. Report on Compulsory Education in Canada, Great Britain, Germany and the United States. Presented to the Legislature 20th March, 1891. (*Printed.*)

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No. 34.. Report of the Commissioner of Crown Lands for the year 1890. Presented to the Legislature 1st April, 1891. (*Printed.*)

No. 35.. Report of the Department of Immigration for the year 1890. Presented to the Legislature 16th April, 1891. (*Printed.*)

No. 36.. Report of the Dairymen's Association for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 37.. Report of the Ontario Agricultural and Experimental Union for the year 1890. Presented to the Legislature 22nd April, 1891. (*Printed as part of Agricultural College Report.*)

No 38.. Report of the Inspector of Division Courts for the year 1890. Presented to Legislature 20th March, 1891. (*Printed.*)

No. 39.. Return to an Order of the House of the nineteenth day of March, 1890, shewing copies of all correspondence on the subject of preparing or publishing school text books, with a statement of all sums paid in connection with the preparation or publication of school text books subsequent to that already brought down, with the award of the arbitrators thereon. Presented to the Legislature 20th March, 1891. Mr. *Preston.* (*Not printed.*)

No. 40.. Report of the Ontario Agricultural College and Experimental Farm for the year 1890. Presented to the Legislature 22nd April, 1891. (*Printed.*)

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No. 41. Analysis of Reports of County and Township Agricultural and Horticultural Societies in Ontario for the year 1889. Presented to the Legislature 6th April, 1891. (*Not printed.*)

No. 42.. Report of the Inspector of the Elgin House of Industry and Refuge for the year ending 31st October, 1891. Presented to the Legislature 24th March, 1891. (*Not printed.*)

No. 43.. Copy of an Order in Council respecting the commutation of fees payable under the Surrogate Courts Act to His Honour, Judge Toms, Judge of the County Court of the County of Huron. Presented to the Legislature 31st March, 1891. (*Not printed.*)

No. 44.. Statement of Sales of Timber Limits held 1st October, 1890. Presented to the Legislature 2nd April, 1891. (*Printed.*)

No. 45.. Return to an Order of the House of the seventeenth day of February, 1890, shewing the number of stationary steam engines and boilers in each of the municipalities of the Province, and for what purpose used. Presented to the Legislature 7th April, 1891. Mr. *Phelps.* (*Printed.*)

No. 46.. Return to an Order of the House of the twenty-eighth day of February, 1890, shewing, so far as the records of the Department of Crown Lands will enable the information to be given, the number, area and location of each timber berth or other territory now under license, the date when such berth or territory was first placed under license, and the name of the original licensee and of the person in whose name such license stood on the first day of January last. Also, shewing the bonus *per* square mile received for each such limit, and a rough map or plan shewing the area now under license. Presented to the Legislature 8th April, 1891. Mr. *Meredith.* (*Printed.*)

No. 47.. Copy of a Minute of the Department of Education dated 25th March, 1891, approving of certain rules with respect to the Salaries of Teachers in the Provincial Normal and Model Schools. Presented to the Legislature 13th April, 1891. (*Printed.*)

No. 48.. Return to an Address to His Honour the Lieutenant-Governor, of the twentieth day of March, 1891, praying that he will cause to be laid before the House a Return of copies of all correspondence, except that already brought down, between any member or officer of the Government of Ontario, and any member or officer of the Government of the Province of Quebec, with reference to the matters in dispute between the Province of Ontario and the Province of Quebec, or any of such matters, of all

memoranda or documents shewing the propositions made for the settlement of the said matters or any of them. Presented to the Legislature 14th April, 1891. Mr. *H. E. Clarke* (*Toronto.*) (*Printed.*)

No. 49.. Copy of an Order in Council respecting the commutation of fees of His Honour Judge Mosgrove, Junior Judge of the County Court of the County of Carleton, under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 15th April, 1891. (*Not printed.*)

No. 50.. Report of the Master of Titles for the year 1890. Presented to the Legislature 20th April, 1891. (*Printed.*)

No. 51.. Report of the Commissioners for the Queen Victoria Niagara Falls Park. Presented to the Legislature 28th April, 1891. (*Printed.*)

No. 52.. Report of the Provincial Board of Health for the year 1890. Presented to the Legislature 28th April, 1891. (*Printed.*)

No. 53.. Report of the Secretary and Registrar of the Province for the year 1890. Presented to the Legislature 29th April, 1891. (*Printed.*)

No. 54.. Return to an Order of the House of the thirteenth day of April 1891, for a copy of the Proclamation of the Returning Officer for the Electoral District of Parry Sound appointed to hold the last election of a member to represent the said Electoral District in this House, for holding the Election and fixing the places at which Polls were to be opened for taking the votes of the Electors thereat. A list of the places, if any, not named in the said Proclamation at which Polls were opened. A statement of the number of votes cast at any polling place not mentioned in the said Proclamation, shewing the number of votes cast for each candidate. Copies of the notices, if any, of the opening and holding of such last mentioned Polls, published by the Returning Officer, and a statement of the date and manner of the publication thereof. Presented to the Legislature 29th April, 1891. Mr. *Marter.* (*Not printed.*)

No. 55.. Return to an Address to His Honour the Lieutenant-Governor of the seventeenth day of April, 1891, praying that he will cause to be laid before this House a Return shewing what proceedings have been taken by the Government in investigating the business carried on by the Lion Provident and Life Association, with copies of any Reports or Orders in Council connected therewith. Presented to the Legislature 30th April, 1891. Mr. *Bishop.* (*Not printed.*)

No. 56.. Return to an Order of the House of the twenty-sixth day of February, 1890, for copies of the lease granted to the Keewatin Lumber Company or John R. Mather, of certain lands and islands in or near the Lake of the Woods, in the District of Algoma, and of all other leases granted of lands or islands in the said district prior to the year 1878. Also, shewing the revenue, if any, derived from the lands or islands so leased, or the timber cut therefrom in each year since such leases were made, shewing from whom received and on what account, in so far as the same are shewn in Department of Crown Lands. Also, a copy of the judgment pronounced in the High Court of Justice as to the rights of the said lessees under the said leases. Also, shewing the area of lands so placed under lease. Also, a list of all claims made for locations or mining rights in the territory covered by the said leases, and of the decisions of the Commissioner of Crown Lands thereon. And copies of all correspondence with reference

to the surrender by the lessees, or any of them, of the rights claimed under such leases, or any of such rights. Presented to the Legislature 1st May, 1891. Mr. *Meredith.* (*Not printed.*)

No. 57.. Statement of the Returns forwarded to the office of the Provincial Secretary of all the fees and emoluments received by the Registrars of Ontario for the year 1890, made in accordance with the provisions of R.S.O., 1887, Cap. 114, Sec. 100, with which are contrasted, receipts of the same nature in the years 1888 and 1889. (*Sessional Papers No. 57.*) Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 58.. Report of the Inspector of Legal offices for the year 1890. Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 59.. Return to an Order of the House of the twelfth day of March, 1890, shewing the lots, townships or other area, in the Electoral District of West Algoma, the timber of which has been sold. The dates when the same was sold; the names of the purchasers, and the prices paid. Shewing, also, what timber berths or other territory in the said district have been placed under license, or in respect of which permits to cut timber have been granted under the authority of the Province; the date when first placed under license, or permits first granted; the names of the original licensee or holder of the permit; the name of the present licensee or holder of the permit and the bonus *per* square mile received for each such berth or other territory. Presented to the Legislature 2nd May, 1891. Mr. *Meredith.* (*Not printed.*)

No. 60.. Report of the Inspector of Factories for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 61.. Return to an Order of the House of the 29th day of April, 1891, shewing: 1. Total sales effected of Grammar School Lands in the Township of Proton, together with payments made on same from March 6th, 1861, to July 1st, 1867. 2. A statement of what yearly payments have been received from sales of Grammar School Lands in the Township of Proton since July 1st, 1867, and what payments were made by the Government to the Township of Proton as result of the same. Presented to the Legislature 2nd May, 1891. Mr. *McKechnie.* (*Printed.*)

No. 62.. Return to an Order of the House of the 29th day of April, 1891, for copies of any and all resolutions of the Council of the Township of Proton relative to Grammar School Lands situated in that Township, or correspondence of the Council regarding same. Also, copies of all petitions or memorials from ratepayers of the Township of Proton which turn to shew or prove that when they purchased Grammar School Lands from the Government it was with the distinct or implied understanding that one-fourth of the purchase money was to be returned to them, as a fund for public improvements within the Municipality. Also, any and all further correspondence regarding same not already brought down, Also, any correspondence with the late Crown Land Agent at Durham, in connection with the sale of said lands which would tend to prove or allege that a fourth of the purchase money was to be returned to the Municipality to form a fund for public improvements in the Township. Also, any other papers on the subject which have not been already brought down. Also, an account of the sums paid to other townships in respect of Grammar School Lands therein Presented to the Legislature 2nd May, 1891. Mr. *McKechnie.* (*Printed.*)

No. 63.. Return to an Order of the House of the 29th day of April, 1891, shewing the total collections from Confederation to the 31st day of December, 1890, on Common School Lands, together with the percentage paid to the municipalities on account of the Land Improvement Fund. Presented to the Legislature 2nd May, 1891. Mr. *Gibson* (*Huron.*) (*Printed.*)

No. 64.. Return to an Order of the House of the 29th day of April, 1891, containing the report of a Committee appointed by the Senate of the University of Toronto on the 10th day of January, 1891, and by the Board of Trustees of the same Institution on the 13th day of January, 1891, to report upon the present and prospective revenue and the most urgent pecuniary requirements of the University and of University College and as to the time, mode and order in which these requirements should be dealt with. Presented to the Legislature 2nd May, 1891. Mr. *Balfour.* (*Printed.*)

No. 65.. Return to an Order of the House of the 29th day of April, 1891, for copies of the judgments of Chief Justice Galt quashing the local option liquor by-laws adopted by the municipalities of Oakland, South Norwich and London West, under the authority of Section 18, of Cap. 56, of the Statutes of Ontario, 1890. Presented to the Legislature 2nd May, 1891. Mr. *Allan.* (*Printed.*)

CONTENTS OF PART VIII.

No. 66.. Report of the Bee-keepers Association for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 67.. Report of the Bureau of Industries for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 68.. Report of the Inspector of Mines, 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

ANNUAL REPORTS

OF THE

BEE-KEEPERS

AND THE

POULTRY ASSOCIATIONS

FOR THE

PROVINCE OF ONTARIO

1890.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.

TORONTO:
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST,
1891.

ANNUAL REPORTS

OF THE

BEE-KEEPERS AND POULTRY ASSOCIATIONS.

To His Honor the Lieutenant-Governor :

I have the honor to present herewith the reports of the Bee-keepers and Poultry Associations of Ontario for the year 1890.

I have the honor to be, Sir,
Your obedient servant,

JNO. DRYDEN,
Minister of Agriculture.

ANNUAL REPORT

OF THE

ONTARIO BEE-KEEPERS' ASSOCIATION

To Hon. John Dryden, Minister of Agriculture :

Sir,—In again presenting our Annual Report we are pleased to be able to exhibit a degree of progress and an amount of work done during the past year which is as encouraging to us as it ought to be satisfactory to all concerned.

Our membership has increased since last report about one hundred per cent., numbering now 323.

In affiliation with our Association are now eleven local societies, viz.: The Middlesex, Norfolk, Brant, Bruce, Oxford, Perth, Haldimand, Lambton, Kent, Western Ontario and Listowel bee-keepers' associations. Ten of these report 5,130 colonies last spring and 7,312 last fall, showing an increase of about 42½ per cent. This apparently small increase of colonies is quite satisfactory in view of the fact that many advanced apiarists, desiring little or no increase of stock, control and suppress the increase to a great extent by skilful management; while it is no less true that the rapid and unprofitable multiplication of colonies among a certain other class of bee-keepers is in the inverse ratio of their knowledge and skill in the business.

The amount of honey reported from these colonies for the season was 28,448 lb. of comb honey and 136,448 lb. of extracted, being an average of about 5.5 lb per colony of comb honey, and about 26.6 lb. per colony of extracted honey, or, say 37 lb. per colony if all in extracted. This is a fair exhibit of the average yield in western Ontario the past season, while in the eastern parts of the province the yield was considerably larger.

Each of the local affiliated societies received a grant of $27.25 from the parent society, to be expended in apiarian prizes at agricultural fairs, for lectures on bee-culture, advertising meetings, etc.; while each member of the Ontario received as a premium from the Association a bee smoker, which has become a necessary article in the outfit of the modern bee-keeper.

The Association made grants to the Toronto Industrial Exhibition and the Western Fair Association of $25 and $10 respectively, to be added to like amounts set apart by these associations to be awarded by them in prizes for honey and other apiarian exhibits.

The solvency of the Association is attested by a moderate balance in the treasury which will appear in the Treasurer's report that follows.

The Board of Directors of the Association held three meetings during the year, the proceedings of which appear in the Directors' Report following.

Bee-culture in Ontario is, on the whole, making very satisfactory progress, and is gradually taking its rightful place among our productive industries; and it will be found, we hope, that the Ontario Bee-Keepers' Association has done its part the past year in bringing about that result.

The chief obstacle in our path, and which seriously threatened the very existence of our favorite pursuit, has been so far removed during the past season that we are warranted in expecting to see it speedily overcome altogether. We refer to the foul brood scourge which was spreading rapidly in the province till we commenced a vigorous war-

fare against it under the provisions of the "Act for the Suppression of Foul Brood among Bees" which the Ontario Legislature was good enough at its last session to pass in answer to the prayer of this Association. The work we have since done under that Act in suppressing the ravages of foul brood in this province duly appears in our Foul Brood Inspector's Report in the following pages.

Bee-culture being a branch of agriculture, we naturally expect to see it carried on principally in connection with other agricultural pursuits, and this is generally the case in Ontario, there being but few exclusive apiarian specialists. This fact, we submit, renders our present advanced position in the science and art of apiculture all the more creditable.

In our apiarian appliances, methods and manipulations we are up to any other country in the world, and ahead of all others in our legislation and work towards suppressing foul brood.

The annual product of honey in this Province now falls but little short of a half million pounds, which at the low average price of 10 cents per lb. represents fifty thousand dollars. And when it is remembered that this product is not, like other agricultural products, wrested as it were from the farmer's capital—from his land to leave it impoverished—a product which, if not secured by the apiarist, would be practically lost, the importance of the industry from an economic standpoint will be conceded. And this will be all the more readily admitted when it is also remembered that honey is the most wholesome and palatable sweet produced in the whole laboratory of nature. It is not merely a luxury. Physiologically it is a staple article of food and practically it is becoming so.

ALLEN PRINGLE, President.
W. COUSE, Secretary.

ANNUAL MEETING AT ST. CATHARINES

The annual meeting of the Association was held in the Court House, St. Catharines, on January 7th and 8th, 1891. The first session commenced at 3 p.m. on the 7th, Allen Pringle, President, in the chair.

Before commencing regular business a half hour was taken up with the "Question Drawer."

PARIS GREEN ON POTATO VINES AND FRUIT TREES.

F. A. GEMMILL asked which was more injurious to the bees, the sprinkling of fruit bloom or potato vines with Paris green?

J. B. HALL said he had frequently seen the bees sipping the dew from the potato vines.

J. G. GRAY thought if the Paris green dried on the leaves the bees would chew the leaves.

J. B. HALL suggested that the dew moistens the poison on the leaf.

The PRESIDENT said that although he had used Paris green for several years on his potato vines, he never saw any evil effects to the bees. The spraying of fruit trees should be done *just after the bloom is off* and not before; to have its legitimate effect in preserving the fruit it must be put on at the time when it will do the bees no harm and that is just after the bloom is off.

Mr. SHANTZ said that at a recent meeting of the Fruit Growers' Association Dr Beadle had stated that the proper time to spray was just before the fruit bloom.

The PRESIDENT said there surely must be some misunderstanding about that.

[Dr. Beadle has since explained his position. He meant that for the apple scab fungus it was best to spray with Eau Celesti before the flowers open and after they have fallen,]

J. K. Darling said the time to spray was after the petals fell.

The formal business of the meeting was now proceeded with by reading the minutes of the previous meeting which were confirmed.

REPORTS OF DIRECTORS, SECRETARY AND AUDITORS.

The Board of Directors reported as follows:

During the year there have been three meetings of the Board—the first at Belleville, immediately following the last annual meeting, for the purpose of appointing the officers and committees, and arranging for the annual premium to members of the Association for the year 1890, which was a No. 2 smoker, supplied by the D. A. Jones Co. The President, Secretary and Treasurer were appointed an executive committee, and they gave grants to the Toronto Industrial Exhibition ($20), and to the Western Fair Association ($10), to be expended in prizes for honey, etc., and arranged the programme for the present meeting. Mr. McKnight and Mr. Emigh were appointed as the representatives of this Association on the Board of the Toronto Industrial Exhibition.

Mr. Gemmell was appointed to represent this Association on the Board of the Western Fair Association.

St. Catharines was chosen as the place of next meeting.

The President and Secretary were appointed a printing committee, and a thousand circulars were printed and sent out through the province inviting membership in the Association, with good results.

A special meeting of the Board was called in Toronto in April for the purpose of appointing an inspector and sub-inspector under the "Act for the Suppression of Foul Brood," when Wm. McEvoy, Woodburn, and Samuel Bray, Alliston, were appointed to the positions of inspector and sub-inspector respectively. It was thought advisable that a committee be appointed to arrange for the preparation, printing, and distribution of a pamphlet on Foul Brood, its cause and cure, and F. A. Gemmell, F. H. Macpherson, D. A. Jones and Allen Pringle, the President, were appointed to carry out that business. This committee waited on the Minister of Agriculture, and arranged for the distribution of such a pamphlet, embodying the Act which had just been passed, and the pamphlet. "Foul Brood among Bees," having been prepared by the committee, was printed by the Department of Agriculture, as an official Bulletin, (No. XXX.), and was distributed to some 6,000 to 7,000 bee-keepers throughout the province. At the urgent solicitation of the German bee-keepers in Western Ontario communicated through the inspector and President of this Association, the Department also generously printed a small edition of the bulletin in German to meet the wants of these citizens. By-laws for the guidance of the inspectors were also passed at this meeting.

The third meeting of the Board of Directors was held at St. Catharines on January 7th, 1881, previous to first session of annual meeting. The membership for the past year has been the largest since its inception, numbering 323, and up to this date (Jan. 7th), the renewals of membership for 1891 (85) are the largest ever before reported at an annual meeting.

During the year eleven local associations affiliated with the parent society, and these represent a membership of 215.

The Treasurer's report shows a satisfactory state of the finances.

The Association is in excellent position, and it is hoped that our successors in office may continue to keep up the interest that the present Directors have endeavored to maintain.

All of which is respectfully submitted.

The Secretary reported $323 received in membership fees, and $55 from affiliated societies.

Abstract statement of receipts and expenditures of the Ontario Beekeeper's Association for the year ending the 7th January, 1891 :

Receipts.		Expenditures.	
1890.	$ c.	Aug. 16.	$ c.
Jan. 7. To balance as per last audit	299 51	By grant to 11 affiliated associations..	$299 75
" 7. " membership fees for 1890 ...	378 00	" Toronto Industrial Exhibition (grant)	25 00
Aug. 25. " Government grant	500 00	" Western Fair (grant)	10 00
		" disbursements connected with foul brood legislation	176 10
		" secretary's salary	50 00
		" disbursements for smokers to members	257 45
		" printing, etc.....	30 75
		" travelling expenses, members of board.....	184 40
		" sundry disbursements	92 18
			$1,125 63
		To balance	51 88
			$1,177 51
	$1,177 51	By balance	$51 88

R. McKnight,
Treasurer.

Audited and found correct this 7th day of January, 1891.

A. W. Humphries, }
D. Anguish, } *Auditors.*

The above Reports of the Directors, Secretary, Treasurer and Auditors were duly received and adopted.

THE PRESIDENT'S ADDRESS.

The following address was delivered by the president, Mr. Allen Pringle, of Selby :

I shall not consume much of the time of this meeting in making what is called the president's address. You were kind enough to place me in this position a year ago against my inclinations, but having accepted the office I felt in duty bound to discharge its functions faithfully. This I have endeavored to do throughout a year of unusual responsibility and work. Not having been much accustomed to official work of any kind—though well drilled and, I may say well-worn, in plenty of work of other kinds—I took the presidential chair of this society with some misgivings, yet with a vague impression that the position was a merely formal sinecure where the president was just a figure-head, ornamental or otherwise, as the case might be, but with little or nothing to do. That, however, proved a mistake.

I think I am quite safe in saying that the past year has been the most important one in the history of Canadian bee culture with the exception, perhaps, of the year we sent over tons of Canadian honey to the Indian and Colonial Exhibition in the Mother Country.

My own impression, however, is that even that creditable achievement must stand second in importance to the work of the past year in the bearing both may have on the future of Canadian apiculture, inasmuch as the plague we have been fighting would ultimately destory the pursuit were it left alone.

Allow me briefly to review that work. At our last annual meeting it became evident —not so much from the public proceedings as from the private conferences of the members—that the disease known as *foul-brood* had already firmly fastened itself on this province. This was a surprise to me at the time, as so little had previously been said on the subject in the papers and at the conventions. That surprise ripened into astonishment almost to dismay as the year rolled on and the evidence of the prevalence of the scourge accumulated. Fortunately, the Belleville meeting decided upon a vigorous course of action, Mr. F. A. Gemmell urging such a course. As most of you are aware, a deputation was appointed to interview the Government and urge the passage of an Act to aid the "Ontario Bee-Keepers' Association" in suppressing the disease in this province. This was all done, the Act secured, and an official inspector and sub inspector appointed within about three months of the first move at the annual meeting. But although the work was rushed through, it seems to have been fairly well done as subsequent events have amply demonstrated. While the "Act for the Suppression of Foul Brood Among Bees" may not be perfect, it is worthy of note that although it has now been in active operation for months, with difficult cases amounting to crucial tests arising, no serious defect has as yet appeared or been pointed out. In England it would take them, I should think from their order of going, some years to compass a work like that from start to finish; and as for our near neighbors over the lake—near and yet so far—who have the merited reputation of being so smart and enterprising and go-ahead-ative, they have not commenced yet, though the work is no doubt needed there just as much as it was here. If, however, they do not go to their duty in this urgent matter soon, it will be no fault of mine as I have been firing away at them on this score of late and intend to keep it up in spite of tariff walls and McKinley bills as well as Uncle Sam's proverbial self-complacency which knows no short-comings. I intend also to try and wake up the stolid Britishers that they may learn more on this subject and proceed to work, for according to their journals they do seem to have some very singular notions on the foul-brood question. If our inspector and Mr. Jones could only get among them and our cousins south for a while as foul-brood doctors they would soon see the absurdity of many of their ideas about the disease and the futility of their remedies to cure it.

Now, should this reach the eye of either Brother Jonathan or John Bull he need not go off in a tangent, for we have just as good a right to preach and teach as either one of them, especially as we have the hard facts as solid proof behind us to back us up. Both of these highly esteemed "kith and kin" have lately through their journals been trying a shot at our Act, our inspectors and our methods, but nobody it seems is hurt and nothing has given away. One of them (he to the South) thinks our cure don't cure at all, while the other in the East thinks the doctor carries about with him and deposits more foul-brood than he cures. On both points Brother Jonathan and John Bull must be set right.

Meanwhile we will now take a look at the facts of our summer's work and see how they scatter the two aforesaid assumptions like chaff! I shall not trench on the inspector's ground as it is his duty to make a full report of his official work to this meeting, which he is, no doubt, prepared to do. The general facts, however, to which I must refer, are these: As soon as our bill became an Act and became law, if not a little before the final touch, our inspector, Mr. Wm. McEvoy, and sub-inspector, Mr. Samuel Bray, were duly appointed by the board of this society. Applications for the inspector's services began at once to come in, and under our instructions he began his official work in May last and continued with but few intervals till the cold weather in November stopped the work for the season. So far as I have been able to learn from all quarters, the inspector's mission has been a complete success, not only in the primary work of curing foul-brood in the hundreds of cases treated, both by personal manipulation and instructions, but in the work of little less importance, of educating those with whom he

came in contact in regard to the prevention and successful treatment of the foul disease. The Foul Brood Bulletin which had been prepared by us and issued by the Department of Agriculture and distributed among six to seven thousand Ontario bee-keepers, was also the means of diffusing much valuable information on the subject, and our thanks are due the Minister of Agriculture and Mr. Blue, the Deputy-Minister, for their services in this matter.

I find that the inspector has also succeeded in removing the misapprehension, prejudice, and even hostility with which many at first regarded him and the Act; and by his conciliatory methods and his readiness always to help, he has gained the good-will and confidence of those even who were at first obdurate and hostile. Many, very many, as I well know from an ample correspondence, are filled with gratitude, not only to the inspectors, but to all who helped through the law which has worked so well in their interests and relief. This is, indeed, encouraging, and we may hope by a persistent continuation of our efforts to succeed in another season or two in getting the foul-brood pest, if not completely suppressed, at least, under control.

But assuming our whole duty done, and when our work may be accomplished in suppressing foul-brood in this province, there is still a serious danger threatening us from our neighbors to the South. This has been on my mind for some time, though I am in no direct danger myself, as I have never imported a bee of any kind from the United States; still, others do, all over the province, and hence the great danger. This is one reason why I have been trying of late to arouse the bee-keepers of the United States to a sense of their duty to themselves, and to us if they wish to continue the exportation of bees, honey, and supplies to us. I have reminded them of what we were doing, of the danger, and of what we expected them to do. We do not wish to be harsh or unneighborly, but we must protect ourselves. It looks as though we must have some further legislation to protect us from this danger, and the move made recently in that direction by the Oxford and Perth Bee-Keeper's Associations is, I think, timely. I have no doubt that the Dominion Government will do for us whatever is necessary to be done, as the Ontario Government has already so freely done.

When the inspector's final account for the season came to me a few weeks ago, I confess I was somewhat dismayed to find that with the previous account which had been paid it considerably exceeded the amount of the government grant made for the payment of the inspectors. However, as I was satisfied by a perusal of the account in detail, and from other sources of information, that no unnecessary work had been done and no unnecessary expense incurred, I placed the whole matter before the Minister of Agriculture and also the Deputy-Minister, and am glad to say that they readily assented under the circumstances to pay the full amount of the inspector's and sub-inspector's bill, money which has been well earned to good purpose.

The past honey season in Ontario seems to have been fair on the whole, some localities yielding abundantly, others good, and others poorly. We have no reason, however, to complain, seeing that some other countries fared so much worse.

The prospects for forage next season are good, and as the bees are wintering well so far, we may reasonably hope for a good crop the coming season.

MUTUAL CONGRATULATIONS.

At the conclusion of the president's address, the mayor of St. Catharines, who had entered, was called on, and delivered an address of hearty welcome to the Association which, among five or six associations which had visited St. Catharines during the past two years, was, he said, no less welcome than any of them. The mayor, in referring to the advantages which St. Catharines possesses as a place of residence, dwelt especially on its excellent system of waterworks, constructed on the natural principle of gravitation. He regarded the system as among the very best in Canada, and the water of excellent quality. He referred, in closing, to an old apiarian veteran of St. Catharines, Mr. Hellems, as "the father of bee-keeping" in their city, who had done much to create an interest in bee-keeping among them.

The PRESIDENT, on behalf of the Association, thanked the mayor for his presence among them and for his kind address of welcome, also for the interest displayed by the city in tendering the Association the use of the comfortable and commodious hall for their meeting. Alluding to what the mayor had said regarding St. Catharines fine system of water-works the president urged the vital importance of pure water for culinary and domestic purposes, in preserving health and avoiding disease—that impure water caused a vast amount of sickness and premature death, which might be avoided and many doctor's bills saved by a little intelligent care and a comparatively trifling outlay. Every family should have a good filter which would purify soft water and render it wholesome for drinking and cooking purposes. He had a filter which had been in use in his family for upwards of twenty years, having been re-packed but three or four times during that period. Of course the ordinary water filter will not deterge mineral impurities held in solution—will not render hard water soft, as that requires distillation—but it will purify rain, river, or cistern water. He advised that every family get a filter.

Mr. HELLEMS, the old apiarist referred to by the mayor, was called upon, and said he had kept bees for over fifty years, commencing to handle them when but ten years of age, and without veil, gloves, or smoke.

FOUL BROOD NOT CAUSED BY THE IMPORTATION OF QUEENS.

D. A. JONES, in touching a point of the President's paper, said he was satisfied that it would be a very difficult thing to prevent the importation of queens from the United States and foreign countries. No danger of foul brood from the importation of queens need be apprehended if the queens are sent with *food of sugar stores*, and if those getting them will be careful to destroy *all* the bees which accompany her. It was Mr. Adam Grimm who gave this matter a thorough test. He had 200 colonies, all more or less affected with the disease, and the queens in many of them were worth at that time from $10 to $15. He did not wish to do away with his queens, and he experimented and found he could put the queen in a clean colony with no danger of giving it the disease.

RESOLUTIONS.

It was resolved on motion of R. MCKNIGHT, seconded by S. CORNEIL, That the President and Secretary prepare a full report of this meeting, including all the papers read, and forward to the Minister of Agriculture, together with the usual report.

It was resolved, on motion of F. H. MACPHERSON, second by S. CORNEIL, That this Association desires to place on record its appreciation of the services rendered this Association by the Minister of Agriculture, in the matter of the passage of the "Act for the Suppression of Foul Brood," and for the generous distribution of an official bulletin relating to the cause and cure of the said disease, and that this resolution be embodied in the report to the Minister of Agriculture.

It was resolved, on motion of R. MCKNIGHT, seconded by J. K. DARLING, That we continue in affiliation with the North American Bee-Keepers' Association.

UNPACKING BEES.

J. B. HALL inquired—"What is the best time to unpack bees wintered outside?"

Mr. F. A. GEMMELL thought about the 1st of June, or just before the swarming fever.

Mr. P. BUSSEY leaves packing on till they hang out, and then takes the top packing off.

Mr. R. McKnight thought the question admitted of two answers. If they are in single clamps he would not remove the packing at all, if it is not inconvenient to work with them. If packed in clamps of several colonies together, he would unpack them whenever it was found necessary to separate the clustered hives to prevent confusion. He had 14 individual cases, and he keeps the bees packed in them until he wants to get at the hives readily for manipulation. He always leaves them packed as long as possible. He thought the individual case the best.

Mr. Wm. McEvoy packs on summer stands in single clamps.

Mr. A. W. Humphries knew of a friend who never unpacked his bees at all, and who always had good success. He kept them in a bee-shed facing the east in three tiers, separated by divisions in the front, and he manipulated them from the back of the hive. In 1889 he had 24 colonies, increased to 36, and took 500 lb. comb and 1,100 lb. extracted honey. In 1890, which was not so good a season, he had 35, increased to 37, and took 250 lb. comb and 1,100 lb. extracted. As his colonies increased he extended his shed.

P. Bussey thought the hives should never be more than four inches from the ground in the honey season.

THE BEST PACKING.

The question, What was the best packing? was asked.

Mr. S. Corneil, in the language of a Scotch bee-keeper in the *British Bee Journal*, thought "the best packing for bees is bees"—when the hive gets full, then unpack.

W. A. Chrysler said in Kent county chaff-packed hives were considered the best; the nights were cool and the days raw and windy in spring and early summer. They kept the covering over the top till June 10th or 15th.

Mr. D. Anguish used chaff-packed hives right through the summer, with four inches of packing.

Mr. S. Corneil considered it best to protect by means of permanently packed walls, which will not make the hives too unwieldly. He believed he had the warmest hives in Ontario. They were packed with cork dust, were not more than 17 inches square outside, and when filled with combs did not weigh more than 22 or 23 pounds. The outside walls were of $\frac{5}{8}$ inch lumber; then came $1\frac{1}{8}$ inch cork-dust; then 3 ply of carpet felt paper, and then the inner wall of $\frac{1}{8}$ inch picture-backing. The entire wall was but $2\frac{1}{3}$ inches thick. He was willing to test them against any known hive for heat-retaining qualities.

Mr. J. Myers used flax chaff for packing, but it drew dampness.

Mr. R. McKnight was opposed to chaff-packing. He believed cork-dust the best; and he believed also that he was the first in the world to recommend it. Chaff draws damp, and it becomes an absorbent when used over the frame. An absorbent was not what was wanted, but something that would resist moisture. Cork was always dry. Dry leaves were better than chaff, but the cheapest was saw-dust taken from thoroughly dried lumber, such as is usually ripped up in planing mills.

Mr. D. Chalmers wintered in three different ways—in house, large clamp, and in individual clamp in summer stands—but preferred the latter. He was trying dry wood ashes as a packing, and hoped it would turn out well.

Mr. S. Corneil said if Mr. Chalmers would look in the Encyclopædia Britannica he would find that dry ashes was one of the very good non-conductors, and will retain heat.

Mr. J. Myers had tried cork-dust and found it good.

Mr. S. CORNEIL said the objection to cork-dust was the difficulty of obtaining it. He had procured 500 pounds in Rochester, which cost him 5 cents per pound and the freight. If there was likely to be enough demand for it, a firm in Toronto had said they would put in a machine for grinding it.

The PRESIDENT said that with the exception of cork-dust, which was the best, he had found that dry fine saw-dust was the best available packing.

A protracted and desultory discussion ensued on out-door *vs.* in-door wintering, when Mr. McEvoy, who was strongly in favor of out-door wintering, insisted upon a vote being taken on the subject, which seemed to show a majority in favor of wintering outside packed on the summer stands.

HONEY PRODUCING PLANTS.

The PRESIDENT called the meeting to order at 7.30 p.m., and called on Mr. MCKNIGHT for his paper on "Honey Producing Plants," which he read as follows :

When requested to prepare a paper on honey producing plants, I felt the duty to be a difficult one. The more I looked into the subject the more apparent did the difficulty become, not because of the meagreness of the subject, but because of its magnitude. A little investigation will reveal the fact that honey producing plants are greatly more numerous and widely diffused than most of us have any idea of. We all know the classes of flowers from which the greater part of our surplus honey is collected, and have some acquaintance with the relative richness of their nectar producing capabilities ; but few of us have any conception of the vast variety of plants that contribute to the simple wants of the bee. They include all and more than all that require the visitation of insects for their fructification and continued existence. Moreover, it is a recognised fact among scientists who have devoted much time to the investigation of botanical mysteries that flowers once devoid of perfect nectaries, and wanting in the functions necessary to the abundant production of honey, may be so changed through time and selection as to become so. This being the case, it is possible that flowers that now regale the bee with their sweet exudations may in time loose their power to supply their liquid attractions, and possibly pass out of existence. It must be borne in mind that honey producing plants are not limited to those only whose flowers are visited by the bee, the flowers of many honey producing plants—their nectaries and the modification of their nectaries—being so arranged that the bee cannot extract the honey therefrom, when it is easily accessible to other insect tribes. Then again there are families of plants that yield nectar not found in the blossom—that, popularly speaking have no blossoms. The common bracken may be cited as an example. A sweet liquid is oftentimes exuded from the leaves of a great variety of trees and shrubs, and appropriated by the bee. It is, however, generally taken by it at second hand, being first collected by myriads of tiny insects, and subsequently expelled from their bodies in a modified form, when it is popularly known as honey dew. It is therefore manifest that for me to attempt to enumerate the honey producing plants even of my own neighborhood would be a hopeless task. Indeed I am persuaded that no bee-keeper or botanist has yet accomplished the work of naming the entire honey producing plants of this or any other country. A tolerably complete list of those best known found on page 386 of Langstroth on the Honey Bee, and revised by Dadant, is appended. To this I refer those who are curious to learn the names of the best honey producing plants of North America.

HONEY YIELDING PLANTS.

Compiled by Langstroth and revised by Dadant.

Compositæ—
- Dandelion.
- Thistle.
- Chamomile.
- Snowflower.
- Ox-eye Daisy.
- Golden-rod.
- Coreopsis.
- Lettuce.
- Chickory.
- Boneset.
- Iron Weed.
- Indian Plantain.
- Fire Weed.
- Aster.
- Burr Marigold.
- Spanish Needle.
- Cone Flower.
- Isatis tinctoria.
- Star Thistle.
- Thoroughwort.
- Butterweed.
- Sneeze Wort.
- Blue Bottle.
- Ragweed.
- Varieties of Echinops.

Leguminous—
- Judas Tree.
- Locust Tree.
- Honey Locust.
- Wistaria.
- Clover—white, red and alsike.
- Melilot.
- Alfalfa.
- Pease.
- Beans.
- Vetches.
- Lentils.
- False Indigo.
- Partridge Pea.
- Wild Senna.
- Milk Vetch.
- Yellow Wood.
- Mesquit Tree.
- Cleome—integrifolia and pungens.

Labiatæ—
- Sage.
- Mint.
- Ground Ivy.
- Horehound.
- Motherwort.
- Horse Mint.
- Basil.
- Hissop.
- Bergamot.
- Marjoram.
- Thyme.
- Melissa.
- Dead Nettle.
- Brunella.
- Pennyroyal.

Rosaceous—
- Wild Rose.
- Cherry.
- Plum.
- Apricot.
- Apple.
- Pear.

Rosaceous—Continued.
- Quince.
- Hawthorne.
- Blackberry.
- Raspberry.
- Strawberry.
- Juneberry.
- Cinquefoil.
- Bowmansroot.
- Queen of the Prairie.
- Meadow Sweet.
- Pyracantha.

Polygonous—
- Buckwheat.
- Lady Thumb.
- Rhubarb.
- Sorrel.
- Knot Weeds in variety.

Borage Family—
- Borage.
- Viper Bugloss.
- Comfry.
- Phacelia.
- Virginia Lungwort.
- Hound Tongue.
- Gromwell.
- False Gromwell.

Scrophularia—
- Simpson Honey Plant.
- Veronicas.
- Yellow Jassamine (poisonous).

Asclepiadaceo—
- Milk Weed.
- Silk Weed,
- Asclepias Syriaca.
- Pleurisy Root.

Cruciferous—
- Rape.
- Mustard.
- Cabbage.
- Radish.
- Candy Tuft.
- Stock.
- Wall flower.
- Moonwort.
- Sweet Alyssum.
- Cress.

Ericaceæ—
- Blueberry.
- Sour Wood.
- Laurel.
- Clethra.
- Alnifolia.
- Cowberry.
- Huckleberry.
- Whortleberry.
- Gaultheria Procumbens.

Valerianacco—
- Valerian.
- Lamb Lettus.

Onagraceæ—
- (Primrose Family.)

HONEY YIELDING PLANTS.—*Continued.*

Onagraceæ—Continued.
- Gaura.
- Œnothera.
- Willow Herb.

Liliaceæ—
- Lilies.
- Asparagus.
- Star of Bethlehem.
- Lily of the Valley.
- Solomon's Seal.
- Violet.
- Night Shade.
- Garlic.
- Onion.
- Crocus.

Malvaceæ—
- Mallow.
- Hollyhock.
- Cotton.
- Abutilon.

Caprifoliaceæ—
- Honeysuckle.
- Snowberry.
- Arrow Wood.

Cucurbitaceæ—
- Cucumber.
- Melon.
- Squash.
- Gourd.

Umbelliferæ—
- Parsley.
- Angelica.
- Lovage.
- Fennel.
- Parsnip.
- Coriander.
- Cow Parsnip.

Caryophyllaceæ—
- Pink.
- Licknis.
- Chickweed.
- Saponaria.
- Rib Grass.
- Goosefoot.
- Blue-eyed Grass.
- Corn Flag.
- Buckthorn.
- Barberry.
- Sumac.
- Grape Vine.
- Polanysia.
- Button Weed.
- Mignonette.
- Teasel.
- Skunk Cabbage.
- Water Leaf.
- Hemp.
- Touch-me-not.
- Amaranth.
- Crowfoot.
- Willow.
- Poplar.
- Oak.
- Walnut.
- Hickory.
- Beech.
- Birch.
- Alder.
- Elm.
- Hazelnut.
- Maples.
- Horse Chestnut.
- Persimmon.
- Gum Tree.
- Dogwood.
- Button Bush.
- Cyprus.
- Liquidambar.
- Linden.
- Aylanthus, etc.

HONEY DEW.

Mr. F. A. Gemmell asked with reference to the secretions found on willows, what it was the insects lived on, and if the secretion went through any change before being exuded and taken up by the bee.

Mr. Wm. McEvoy, thought that honey dew was atmospheric. He had found the secretions on the leaves of trees, but could not find but one or two of the aphides.

Mr. S. Corneil thought if Mr. McEvoy had gone higher up the tree he would have found millions. In the fall of 1886 he was away from home several months, and left his bees in charge of others. That fall the aphides had come in bigger flocks than ever, and his bees gathered much honey dew. The colonies were doubled down to 180, and some of the honey dew was fed to those deficient in stores. The smell was horrible and the mixture was as dark as black-strap. In the spring his 180 colonies had dwindled down to 50 to 60. He had exposed some of the combs, but there were no bees around Lindsay that would rob them.

Mr. J. K. Darling corroborated what Mr. Corneil said. The aphides live by puncturing the leaf or stem. The liquid is exuded from some little horns in the rear. He used to blame the ants for killing his cherry trees, but he had since found out that they were going up the trees to milk the aphides.

Mr. D. A. Jones said that when Prof. Cook visited Beeton some years ago, they had gone into the bush near one of the out apiaries and cut off branches, on the leaves of which were thousands of these aphides, and when exposed under a microscope they could be actually seen puncturing the leaves.

Mr. Wm. McEvoy asked how it was that the honey dew was most plentiful during dry weather?

Mr. J. B. Hall thought the reason was that in wet weather the honey dew would be washed off the leaves; when dry, the exudations dry on the leaves, and in the mornings when wet by the dew the bees gather it.

Mr. McKnight believed that the honey dew was due to atmospheric conditions, but the saccharine matter comes from the plant and not from above.

FOUL BROOD INSPECTOR'S REPORT.

Mr. McEvoy, the inspector, made an oral *ex tempore* report to the meeting, but subsequently made the following duly attested written report:—

I commenced my official work the 29th of May last, and, with the exception of about six weeks, I was out until the first week in November. I visited one hundred and sixty apiaries. I found over six hundred cases of foul brood. With my help and by my orders over three hundred and sixty colonies have been cured of foul brood. I ordered four colonies to be destroyed at once, as I did not consider it safe, in the interests of neighboring bee-keepers, for the owners to try to cure. I burned four colonies in the County of Wellington. I gave two bee-keepers leave to kill or take up in the old way about twenty colonies that had foul brood. Some apparently knowingly sold foul brood colonies before the Act was passed. Two bee-keepers, so far as I know, sold foul brood colonies since the Act passed. I went to them and got them to pay back the money. I believe one of these men did not know that his colonies had foul brood when he sold the disease. In nearly every place I visited I warned the bee keepers to keep dead brood of every kind out of their hives, as foul brood was caused by the rotting of uncared-for brood, which, in my opinion, was the *real and only cause* of foul brood. I told the bee-keepers that I spoke from experience as I had discovered the cause of foul brood. I also told many that the Rev. Mr. Gruetzner, one of Canada's *best* bee-keepers, had foul brood originate in a colony right in his own apiary in New Dundee, Ontario. Mr. Gruetzner put combs of brood into a weak but healthy colony; soon after, intense heat set in and the whole colony became full of foul brood. In a letter which I received lately from Mr. Gruetzner, he says that the opinion seems almost universal in Germany that foul brood is caused by dead brood. Mr. C. J. Robinson, of Richford, New York, U.S., has, he writes, tested and proved that foul brood may be caused by rotten brood. He agrees with me as to the cause of the disease. From my discovery of the cause of foul brood, Mr. C. J. Robinson's test case and discovery, the almost universal opinions of the bee-keepers of Germany, and the discovery of the Rev. Mr. Gruetzner, of New Dundee, Ontario, I positively declare that I believe that the rotting of uncared for brood is the *whole, sole, real and only cause* of foul brood. I sent Mr. Pringle, the president of the Ontario Bee Keepers' Association, a correct account in detail of my time, livery hire and car fare from place to place. I kept a very careful account of my time and expenses. In many apiaries colonies that had been wintered in bee houses and cellars had dwindled very badly in spring. Those wintered on the summer stands in properly packed cases, with lots of bees and plenty of well ripened early stores, were far ahead of the cellar wintered colonies. I winter my colonies on the summer stands and pack with leaves from the maples and other trees. The packing is about four inches thick. I like to have *every colony crowded on about six combs of solid sealed stores*, and then leave them carefully alone until the warm weather in June comes to stay. My apiary was in the best condition in June of any I saw anywhere in the province. I am an advocate of out-door wintering when the hive is well packed with *plenty of both bees and sealed stores* and *not less than four inches* of good packing on every side and top, as I think this management would diminish the foul brood pest. I did all I could for every bee-keeper where I found his apiary out of order, for a healthy apiary presupposes orderly careful management. While I saw some apiaries in poor condition, and *many* almost ruined by foul brood, I saw some of as good apiaries as any one could wish for. I saw some very valuable appliances and methods in my rounds, and believe that in *many things* the bee-keepers of Canada are away ahead of any country in the world. Our supply men are turning out work in fine style, and for Italian queens we can get *very choice ones* in this country. Canada will after a while have the cleanest, healthiest and best kept lot of apiaries of any country in the world. Mr. Pringle, Mr. Gemmill and Mr. Frith deserve much credit for the way they worked and got the *Foul Brood Bill* passed. Mr. Pringle has not only looked well after the foul brood business in Ontario, but he has done his best to get the bee-keepers of the United States to make a move towards cleaning the disease out of their country. He is now trying to get the bee-keepers of England to do the same.

My time, livery and car fare amounted to	$555 50
Mr. Bray's time, livery and car fare amounted to....	31 10
Total..	$586 60

The Deputy Inspector reported to the President.

Wm. McEvoy.

Mr. Samuel Bray, deputy inspector, visited 16 apiaries in the counties of Simcoe and York, and found 65 colonies with foul brood; but, owing to the lateness of the season and robbing from diseased colonies which had been going on, he was unable to do much in the way of curing or treatment, especially in the town of Barrie, where the disease has a strong footing.—A. P.

FOUL BROOD.

At the conclusion of Mr. McEvoy's report, the President called upon Mr. S. Corneil of Lindsay to read his Paper on Foul Brood, as follows:

The subject of foul brood among bees is too extensive to be treated fully in a single paper. I shall in the first place attempt to discuss the origin of the disease, and the means by which it is spread, noticing some popular errors which have crept into the current bee literature. In order, if possible, to present this branch of the question in such a way that it may be understood correctly, I shall avail myself, as far as may be, of the work already done by some of the leading bacteriologists of the day regarding this and kindred diseases, and afterwards shall give some odds and ends which seem to be of importance with respect to the propagation, prevention and cure of the disease without attempting to exhaust these branches of the subject.

In cases where putrid chilled brood is followed by foul brood, the microbes present are of two different kinds, "septic" and "pathogenic." The term "septic" is applied to microbes or bacteria which generally live and multiply in decomposing organic matter and in dead bodies only. Bacterium termo, one of the most common of these microbes, is ever present in the air, water and soil. Septic microbes are *par excellence* the microbes of putrefaction, and for their operations chilled blood in the hive would furnish a most congenial soil,

On the other hand those microbes are termed "pathogenic" which always characterise, by their presence, a special disease, epidemic or contagious, and possessing special symptoms, such as scarlet fever and smallpox in man, splenic fever in domestic animals, and pebrine in silk worms. Unlike the septic microbes they attach themselves as parasites to living animals, and grow and multiply within the body, or on its surface, at the expense of their host. Such is bacillus alvei, the microbe of foul brood. As it has been proved by experiment that it may be sown and propagated in a mixture composed of beef-tea and gelatine, and also in a culture composed of the crushed larvæ of bees, it is reasonable to suppose that in the temperature of the hive its germs, floating in the air, or in the water in the case of drowned brood, may find a lodgment and grow and multiply in dead brood, side by side with the microbes of putrefaction. Such is the opinion of Prof. Cook, T. W. Cowan and others. Dead brood may thus become a factor in starting foul brood in hives which otherwise might escape, and this for the following reasons. In the first place it has been shown by Dr. Watson Cheyne of London that the success of the attack of contagious germs on the cells of living tissues often depends on their number. He found, for instance, that where a certain number of microbes had no effect when injected into the circulatory system, twenty-five times as many caused death. With some kinds, however, it was found that a single bacillus was sufficient to cause death. These effects are explained as a struggle between the growing cells of the animal tissues and the bacteria. In the struggle, victory will in most cases remain with the cells, and the bacteria will disappear. The writer of the article on schizomycetes in the Encyclopædia Britannica says "The living tissues of a healthy animal exert actions which are antagonistic to the parasitic invader." Pasteur might also be quoted in favor of this contention. In view of the foregoing we can see that after the microbes had multiplied in the rich soil of the chilled brood, their spores might, by a sheer force of numbers, have gained a foothold amongst the live brood, where before they might have failed to do so.

Again Cheshire says, "Pricking a needle into a diseased larva and then touching a larva in a healthy hive with it is, five times out of six, enough to start a vigorous attack." The bees would be likely to carry more or less of the matter containing foul brood germs on their antennæ and feet to healthy larvæ, and in this way spread the disease in the hive.

There is another reason why putrid chilled brood in the hive may be favorable to the attack of bacillus alvei. There is a very poisonous substance developed, as the ultimate product of the putrid fermentation of organic matter, called ptomaine, twelve

millegrammes of which will kill a dog. Its effect on the cells of growing tissues is to weaken their action, and if brought into contact with living brood, by the bees, it would increase the chances of success on the part of the attacking microbes. These are the only ways in which the putrefactive matter of chilled brood can assist the spread of foul brood.

We must guard against the error of supposing that foul brood is ever produced spontaneously as the result of putrefaction caused by septic microbes, that these microbes can successfully attack living brood, or that they can in any way be transformed into the bacilli of foul brood.

The microbe of foul brood is no more produced spontaneously than are pine trees or elephants. The writer of the Encyclopædia Britannic before referred to says, "No case of spontaneous generation has withstood rigid investigation." Huxley, Tyndall, and others might be quoted in corroboration of this statement.

As to the microbe of putrefaction successfully attacking live brood, Klein says: "Microbes of putrefaction cannot exist in healthy blood and tissues." Dr. Burdon Sanderson, Dr. Ferrier and Herr J. Van Fodor confirm this view of the matter.

Neither is the microbe of putrefaction ever transformed into the microbe of foul brood. The author of "Microbes, Ferments, and Moulds." (No. 57 of the International Scientific Series) says, "Up to the present (Sept. 1885), a septic microbe has not been proved to be transformed into a truly pathogenic microbe."

Under favorable circumstances bacillus alvei increases very rapidly. Cheshire found that in his culture tubes they multiplied every twenty minutes. At this rate a single microbe would increase in twelve hours to the astounding number of over fifty three billions, and the increase in twenty-four hours would require twenty-two figures to express it. In the hive no doubt the increase would be more rapid still. A single dead larva frequently contains a billion of spores.

It has been demonstrated that while wet, the spores or seeds of the disease are not given off from the matter containing them. It is only after the matter dries up that the spores becomes floating germs in the air. Similarly, in the case of scarlet fever, the danger of catching the contagion is greater when exfoliation takes place, and in the case of smallpox when the postules are drying up.

The microbes of foul brood have been found in the tissues and intestinal canal of adult bees by Schœnfeld and Hilbert in Germany, by Cowan and Cheshire in England, and by Prof. McLain in America. Schœnfeld found the microbes in abundance in the rectum of bees. An American experimenter mixed two grains of bee fæces from a diseased hive in a quart of syrup, one half of which he fed to a hive of healthy bees ten miles off. These bees were permitted to fly under cover only. In thirteen days the disease appeared, and in four weeks the combs were reeking with foul brood. It is easy to understand how bees may distribute the germs of the disease for miles over the fields in the vicinity of a diseased apiary, by means of their excreta discharged while on the wing; and as this excreta becomes rapidly dried, how the microbes may be caught up by the winds and distributed as dust in the air over a whole country side.

The disease may be introduced into our apiaries from distant countries by the excreta of the escort bees accompanying queens. English bee-kepers say the disease was carried to them with queens from Italy, and A. J. King, late editor of the Beekeepers' Magazine says it was brought to an apariay in Cuba, of which he had charge, with queens purchased in Ontario.

It has been said that the microbes do not adhere to the bees themselves, but this has been proved to be a mistake. In 1871 Schœnfeld washed with distilled water, bees from a foul-broody colony, and found that this water contained, mouldy pieces of rotten brood.

There is a general agreement amongst those who prescribe methods of cure, that in diseased hives, the combs become contaminated, and should be melted into wax. It is agreed amongst bacteriologists that the maximum temperature required to kill mature

bacteria, in water, is 140°. Many kinds are killed at a lower temperature. It has been proved that the spores, as compared with the adult organisms, possess a power of resistance to heat, in the proportion of 11 to 6; that is if 140° is required to kill the fully developed bacterium, 257° may be required to kill its spores. Wax melts at 142°, a temperature most likely inadequate to kill the spores of bacillus alvei. To what extent the disease has been spread by germs contained in comb foundation, made from the wax of infected hives will never be known.

Dessicated spores, like the dried seeds of plants, often refuse to imbibe water; in this state they resist the action of heat for a long time. It has been found that plant seeds, contained in fleeces of wool, imported from South America, sprouted and grew after the fleeces had been boiled for four hours. An examination showed that some of the seeds had not been wetted. Tyndal boiled his culture tubes for three, four, five, and in one case eight hours, without killing the microbes they contained. He afterwards discovered that by repeatedly boiling them for less than a minute at a time, at intervals of ten or twelve hours, he never failed to sterilize his cultures. Boiling hives and appliances may fail to disinfect them for the above reasons, unless the boiling is repeated several times.

Honey boils at 235°. If the boiling were repeated a few times any spores it might contain would no doubt be killed. Spores have been subjected to a cold of 180° below zero without being affected in the least.

The fully developed bacteria succumb to the influence of both heat and chemicals much more readily than their spores. Dr. Koch, now so famous in connection with the cure of consumption, says that the spores of anthrax, or splenic fever, are only killed in a five per cent. solution of phenol, when exposed to it for twenty-four hours, but that the bacilli themselves are destroyed by a solution of one per cent. A solution of one-fifth of one per cent. is the strongest that can be fed to bees. Most of the drugs recommended as remedies for foul brood will kill the mature bacteria with which they come in contact, and will prevent their multiplication, but they will not destroy the spores, when used in the greatest proportion possible among live bees and brood. When a cure is effected with drugs the different *hatches* of bacilli, so to speak, are killed by repeated applications, until there are no more spores to germinate.

A solution of corrosive sublimate, about one in one thousand, is sure death to all bacteria and spores. It is a very powerful poison, and cannot be fed to bees or used with effect as a spray, without killing the patients as well as the disease germs. One eighth of an ounce in a gallon of water may be used as a wash for the hands, smoker and other implements. Half a molasses barrel-ful of the solution will cost less than a dollar and a half. In this solution hives may be dipped and disinfected at a trifling cost, but they must be thoroughly rinsed to remove the poison. It has been recommended that one ounce of potassium permanganate be added to every four gallons of the solution, coloring it, to prevent possible accidents, arising from mistaking the solution for water, whilst it is also a useful disinfectant. Sulphurous acid, produced by the burning of brimstone, will kill exposed bacteria, but will not kill their spores.

The method of cure, by changing the bees to a clean empty hive, in the honey season, has been more generally successful than any other. It was practised by Seydell in 1767, by Voight in 1775, by Bonner in 1789, by Della Rocca in 1790, and was given in "Quinby's Mysteries of Bee-keeping," in 1865. It is contended by some that, inasmuch as the disease lurks in the honey the bees should first be placed in a state of quietude and starved till the last particle of honey in their honey sacks is consumed. Even if it were possible to know when the last particle of honey in every bee was consumed without making a post-mortem examination of each one, placing the bees in a state of quietude, in which their functional activity is reduced to a minimum, is about the poorest possible way of causing a speedy consumption of the honey carried with them from the diseased hive. Besides this there is abundant evidence to show that the vitality of bees thus treated is so reduced by want of food that the stock is found to be seriously injured for work for a considerable time. The alternative method of

feeding the bees liberally during their confinement, causing them to secrete wax and build comb, is found to be more effectual in changing the contents of their honey sacks, while at the same time the bees are kept in a state of vigorous health.

The theory that the disease is most commonly communicated from hive to hive, and from one apiary to another in honey, rests on circumstantial evidence which is not conclusive to every one. Diseased hives have been robbed without the disease being carried by the robbing bees. Prof. McLain gives apparently strong reasons for believing that the disease germs most commonly lurk in the pollen. Cheshire says, "such minute bodies as bacilli, produced in inconceivable numbers in the hive, must occur in honey as an occasional contamination, but the idea that they grow in the honey is quite contrary to all evidence. They cannot grow in any fluid having an acid reaction." All experimenters find it necessary to make their cultures slightly alkaline, or else the bacteria will not grow and multiply. To settle these questions we require experiments to determine whether a large number of cultures can be freely inoculated with bacillus alvei, by the addition of honey and of pollen taken from diseased hives.

As the settlement of these questions has an important bearing on one of the agricultural industries of the country, our Association might fairly ask the Director of the Dominion Experimental Farms, and the President of the Ontario Agricultural College, to have the investigations made in their laboratories. Ordinary bee-keepers lack the time, the appliances, and above all the skill, to make such experiments for themselves. Speaking of such investigations Tyndall says, "Here as elsewhere in these difficult enquiries the sagacity which comes in a great part from nature, the skill which comes from training and the care which ought to root itself in his moral constitution, are all necessary to save the experimenter from error and to lead him to truth."

A long discussion followed on foul-brood, lasting till near midnight. A majority of the meeting seemed to question some of the positions taken in Mr. Corneil's paper regarding the propagation and spread of the disease as being contrary to the facts and to their experience.

Mr. Corneil was asked how it was that the simple plans of cure followed by the inspector and Mr. Jones were so successful if the positions taken by him were tenable.

Mr. CORNEIL said: When the air is full of these spores they will light on the bees when shaken into the clean hive. Are the spores all off after four days? It doesn't seem that they are, or at least seldom. I surmise that we all know that bees are very cleanly, and when put into this clean hive to build comb, or into a state of quietude, may they not get rid of any of these foreign matters?

Mr. Corneil was also asked if queens really did carry the disease, and replied that queens discharge fæces, that the spores are in the honey, and they pass through and are discharged in the fæces. Even though all the bees which accompanied the queen were destroyed still there might be danger.

The essayist, in his paper, had argued strongly against the possibility of the spontaneous generation of the foul-brood microbe or any other living thing, and read extracts from scientific authorities in support of his position, not embodied in the text of his paper—especially from Prof. Huxley.

The PRESIDENT remarked that while he agreed with nearly everything in Mr. Corneil's able paper, he could not agree with him as to the impossibility of spontaneous generation. The scientists, including Prof. Huxley, did not deny the possibility of spontaneous generation. They simply affirmed that they had no proof that it had taken place during the *life* history of the earth. His (the President's) own reasoning on the question was simple and conclusive. Science had established that spontaneous generation did actually take place in the past history of the earth; and if it had occurred in the past, why might it not occur again? There was a time when the earth contained no life of any kind, and was incapable of supporting life, being a molten mass of matter; but after it had cooled on the surface and a crust formed, and it became capable of supporting life, then life appeared on its surface—and appeared *spontaneously*. This was the teaching of modern science—the teaching of the very scientific authorities quoted by Mr.

Corneil. And if spontaneous generation was an actual fact in the past history of the earth nobody could with reason say to-day that it was impossible. The changed condition of the earth is not sufficient justification for such an assumption, for, as Tyndall says, matter contains in itself the "promise and potency of every form and quality of life."

REPORTS OF AFFILIATED SOCIETIES.

Reports were read from eight affiliated societies, viz.: The Middlesex, J. B. Aches, president, A. W. Humphries, secretary; the Bruce, A. E. Sherington, president, A. Tolton, secretary; the Oxford, F. A. Gemmell, president, Jas. E. Frith, secretary; the Brant, J. R. Howell, president, D. Anguish, Secretary; the Norfolk, J. P. Ryder, president, C. W. Culver, secretary; the Haldimand, F. A. Rose, president, E. C. Campbell, secretary; the Lambton, E. Morrison, secretary; the Perth, F. A. Gemmell, president, A. Johnston, secretary.

The Western Ontario, Kent and Listowel societies failed to make reports, and it was moved by F. H. Macpherson, seconded by J. K. Darling, and resolved, That the secretary of this association be instructed to ask the secretaries of these delinquent societies to explain the absence of their reports, and that in the absence of a report satisfactory to the executive committee, the grant for the next year be withheld.

THE BEST HONEY AND WHERE OBTAINABLE?

The President next called for a paper by D. A. Jones, which was read as follows:

I thought that perhaps some items on honey might be interesting, as it may not be generally known that the same source of honey yields different qualities in various sections even of Ontario, and the difference is greater as we go further south or nearer the sea level. The atmosphere surrounding the plant or bloom has its influence on the honey. The moisture of the earth and the particular kind of soil also affects the color, texture and flavor. Some may think that if bee keepers all possessed the same knowledge and gave their bees the same kind of treatment, and if their entire management of the apiary was the same that honey from the same sources would be alike. This however is not so. We know of localities in Ontario where they can produce finer honey than we can get in ours, and we also know of some not equal in quality. Our range is from four to six hundred feet above lake Ontario. There are some ranges west and north of us lying south of the Georgian Bay that are between twelve and eighteen hundred feet above lake Ontario. These higher ranges are the height of land between Georgian bay and lake Ontario and include the county of Grey which produces some of the finest honey we ever saw. The locality from whence some of the extra fine samples were received is very high land although not unusually dry, but the land has a great deal of limestone gravel through it. Some of the soil is varied heavy clay loam and gravel, but the whole of it seems to contain abundance of limestone gravel which apparently tends to improve the quality of honey especially where it abounds on high lands like the above where the atmosphere is very pure. On low, foggy damp lands we have never found the honey equal in quality to that got on higher ground. It would be quite useless for us to expect honey from low lands equal to the best from the same source that has been obtained from higher grounds. I have seen some very fine honey good in color, texture and flavor from California and various parts of the United States, and also from Europe but we have samples before us from the heights of land in Ontario that are so much superior without any special care or attention that in justice to those occupying those favored spots as far as quality is concerned we must mention the fact, and from reports of the last few years we believe that fully as large or larger yields have been secured from those higher points. Perhaps limestone has something to do with increased yield, for the largest yield of honey we recollect of having being taken in Canada was from a section

where the limestone rock cropped out in many places on the surface. The northern parts of the United States have many very superior localities as well as Canada, but it does seem that latitude or altitude is desirable in order to secure the finer grades of honey. I can assure you some of the finest qualities of honey in Palestine are taken from the mountains. This is perhaps the reason why many people in the East claim that the Hymettus honey is so fine. We recollect when we first went to Palestine in search of the best bees that we found bee keepers in the valleys down almost on a level with the Mediterranean sea. They told me that if I wanted the best bees I should go away up on the top of Mt. Lebanon and one kind bee keeper at Beyrout who had a large number of colonies pointed out a village about twenty miles up Mt. Lebanon where he said the bees made honey much superior, and advised me to go and get that kind of bees. I asked him if he ever interchanged bees and he said yes, and when they were taken up into that mountain they got better, and that the best bees were there. I then examined the flowers all the way up the side of the mountain and the honey in different apiaries, and found that while the honey was so dark and strong in the valley that it could scarcely be eaten, from the same source on the top of Lebanon it was bright, clear and good. I should judge that this village was about six thousand feet above the Mediterranean, although I could only estimate the distance by comparing its height with the road running over the mountains to Damascus to the north of it. I also noticed that the honey gathered in the valley at Damascus and in the Jordan valley was very much darker and stronger than that gathered up on Lebanon and Hermon. In fact, I was surprised at the superior quality of some of the honey gathered on Mount Hermon. Perhaps if we gave this matter a little more careful study and compared samples from various localities we might be able to learn some further and very interesting facts in regard to production and quality of honey.

This paper was followed by a lengthy and interesting discussion.

C. W. Post remarked that wild mustard gives a straw-colored honey.

W. Couse said that basswood honey in the State of Michigan is darker than honey from the same source in Canada.

J. B. Hall thought it was because of its being mixed.

W. Couse—They said it was basswood honey.

J. B. Hall—Yes, basswood.

J. Myers had never seen bees working on mustard.

F. A. Gemmell supposed the difference was in the character of the soil in Canada and Michigan.

RIPENING HONEY.

This subject was freely discussed.

J. K. Darling said he put his unripe honey in tin cans and allowed it to stand, then took off the lighter honey from the top.

J. B. Hall thought there should be no light honey to take off.

D. Chalmers believed Mr. Jones was perfectly right, and he thought it would be a good idea if at the next convention all the bee-keepers present would furnish samples of the different kinds of honey, so that they might be compared as to color.

D. A. Jones put the honey into ripening cans or extractor bodies, and allowed it to evaporate, after which the honey was drawn off from the bottom of the cans.

Mr. Corneil—The factors favoring rapid evaporation of honey are the extent of surface exposed, and a constant change of the stratum of air in contact with the honey. A quantity of honey having an exposed surface of ten square feet will evaporate twice as quickly as the same quantity having only five square feet exposed, other things being equal.

The PRESIDENT—Temperature is also a factor, is it not?

Mr. CORNEIL—Yes, a most important one, but I was referring only to ripeners for honey exposed to the outside air in the honey harvest, in which case the temperature would be the same. Mr. Jones favors evaporating cans which will contain honey several feet in depth, but exposing only comparatively small surface. I have three tin-lined tanks, three feet by six and one foot in depth. When these are full I have an evaporating surface of fifty-four square feet for about 3,000 pounds of honey. Another very good way is to have most of the curing done by the bees, by placing a large number of empty combs in the surplus chamber, so that the honey may have a large surface exposed to the currents of the hive. I generally put on twenty and sometimes thirty combs, besides those in the brood chamber.

Then unless the air in contact with the honey is constantly changed by currents, it becomes saturated like a sponge filled with water, and evaporation ceases. The necessary changes of air cannot take place as readily in deep cans, only partially filled, as it will in shallow tanks.

Mr. MCKNIGHT—Honey has a strong affinity for moisture, and will absorb it from the air, and become thin; therefore the larger the surface exposed the worse for the honey. I have a large double walled can which I place on the cook stove, and evaporate my honey there in a waterbath, and pack it while hot, before it can absorb moisture.

Mr. CORNEIL—Quite true, very thick honey will absorb considerable water from very damp air, but I make this statment: if two vessels of the same dimensions be filled with honey and placed side by side in ordinary air, one vessel having honey weighing only twelve pounds to the gallon, the honey in the other weighing sixteen pounds to the gallon, water will be evaporated from the thin honey and it will thus lose in weight, while the thick honey alongside will absorb water from the air and will increase in weight. If the percentage of moisture in the air is at the average, there is a medium density for honey at which it will neither absorb water from the air nor give it off by evaporation. Such honey only is fit for the market. It is about one-third heavier than water, weighing about thirteen and one-third pounds to the gallon, in the atmosphere of Ontario. If the honey is a little cold it will be stiff and appear to be dense, if kept in a warm room for some time it will appear to be too thin. A guess at the density of honey, by stirring with the tip of the little finger is not reliable. Every bee-keeper should provide himself with a hydrometer, costing only about sixty cents. With this instrument anyone can determine the density of his honey, and he will then be in a position to speak of it with confidence to intending purchasers. Occasionally the honey is sufficiently dense when extracted, but at other times it is quite thin, and will ferment unless it is evaporated. Hence the importance of being able to determine its exact condition.

R. MCKNIGHT—If a tank be placed in a garden with the temperature at a proper height on a calm day, and next day the temperature is the same but it is very windy, under which conditions will the honey ripen most quickly?

S. CORNEIL—On a windy day; change of atmosphere above the honey will be more constant.

R. MCKNIGHT did not concur in this view.

F. A. GEMMELL asked if the aroma had anything to do with the flavor?

J. B. HALL said the temperature had a great deal to do with the ripening of honey, as also has the frequent change of the atmosphere. If a better place than the comb in the hive could be found for this purpose he wanted to know it. The thin combs, and the constant change of the air over the combs, caused by the "fanning," makes it just the place. The aroma that we got with honey ripened in the hive, was what took the prizes at the fairs.

R. MCKNIGHT contended that more honey was rendered uncured after it was a month out of the combs than was extracted in a green state. The moisture has a better chance of absorption. Mr. Corneil, he said, seemed to think that there was no difference between flavor

and aroma, but flavor was a permanent quality, while aroma was a floating. The aroma was the volatile principle of the essential oil from the flowers whence it is gathered. If you chew the flower you get the flavor; smell it and you get the aroma. The aroma was at its best just as the honey was taken from the hive—it passes off in time. To preserve it seal the honey air-tight quickly. Speaking of the point at which honey would boil, he believed that Mr. Corneil was the first to announce the degree at which honey would boil—235°. The only effect that putting honey in boiling water would have, would be the loss of the aroma. To keep this, bottle the honey at once when taken directly from the hive.

CENTRAL FARMERS' INSTITUTE.

President Pringle, as delegate to the Central Farmers' Institute at Toronto, made a verbal report. He said that he had attended the institute meeting and although he got in some work on agricultural lines he got none in on the apicultural line, owing to the fact that the executive of the institute had not been notified of delegate's intention to present a paper, which, however, was no fault of his as it was too late for notice when his appointment as delegate was made. He had, however, attended to that matter for his successor delegate to the Central Institute, which would meet in Toronto the next month (February, 1891), by giving notice of a paper from our representative.

It may be stated here that a paper was read by our delegate, at the institute meeting referred to above, on "Bee Culture in Ontario," which was freely discussed, and for which a vote of thanks was tendered the delegate. Our report for 1891 will, however, be the proper place for this paper and the delegate's report.

LAST SESSION—SECOND DAY.

Election of Officers.

The following officers were elected by acclamation:

President—Allen Pringle, Selby, Ont., re-elected.
Vice-President—F. A. Gemmell, Stratford.

Directors:

District No. 1.—W. J. Brown, Chard.
" 2.—J. K. Darling, Almonte.
" 3.—M. B. Holmes, Athens.
" 4.—C. W. Post, Murray.
" 5.—S. Corneil, Lindsay.
" 6.—W. Couse, Streetsville.
" 7.—A. Picket, Nassagaweya.
" 8.—F. A. Rose, Balmoral.
" 9.—M. Emigh, Holbrook.
" 10.—R. McKnight, Owen Sound.
" 11.—A. W. Humphries, Parkhill.
" 12.—R. F. Holtermann, Romney.
" 13.—R. H. Smith, Bracebridge.

Auditors.—D. Anguish and J. B. Hall.

NEXT PLACE OF MEETING.

It was moved by R. Myers, seconded by F. H. Macpherson, and carried, that the city of London be suggested to the directors by this meeting as the next place for annual meeting.

It was subsequently decided by the directors that the next annual meeting shall be held in London on 5th, 6th and 7th of January, 1892, a third day having been added by resolution of meeting, moved by D. A. Jones and seconded by A. Laing.

COLUMBIAN EXPOSITION.

A letter was read by the secretary from W. T. Buchanan, Chief Department of Agriculture of the Chicago Fair, urging this association to make an exhibit at their approaching exposition.

The meeting decided to take no action in this matter until the Ontario Government decides what it intends to do as to an exhibit.

Moved by D. CHALMERS, seconded by R. A. MYERS, that the sum of $25 be tendered to President Pringle as a slight compensation for his extra services in connection with the Foul Brood Act. Carried unanimously.

The PRESIDENT was duly empowered by the meeting to appoint delegates to the next North American convention.

PROPOSED EXPERIMENTS *RE* FOUL BROOD.

It was moved by S. CORNEIL, seconded by R. MCKNIGHT, and resolved, That whereas it is generally admitted that the combs in hives infected with the disease of foul brood are contaminated, and where such combs are rendered into wax it is feared that the heat required for the purpose is not sufficient to kill the spores of *bacillus alvei*, thereby allowing the disease to spread by the use of comb-foundation manufactured from such wax; and

Whereas, the opinion is that the spores of the *bacillum* are carried by the bees in honey and in pollen from diseased hives,

Be it therefore resolved, that the president of this Association be instructed to communicate with the director of the Experimental Farm at Ottawa, and the president of the Ontario Agricultural College at Guelph, asking them, on behalf of this association, to have the necessary experiments made to determine whether the disease may, to any considerable extent, be spread by the above means or not.

REPORT FROM THE INTERNATIONAL ASSOCIATION.

The delegates to the North American Bee-Keepers' Association reported as follows:

This organisation, which has been in existence for about twenty years, comprises in its constituency both the United States and Canada. It was intended from the outset to be composed mainly of delegates from the several states, provinces, and territories of the North American continent. It was part of the plan that local associations should send their best bee-keepers as representatives to the continental body, which was to form a sort of high court or parliament of apiculture. The original programme has never been fully carried out, and the meetings have been largely local, so far as the attendance has been concerned. The association has met twice in Canada; once in Toronto, and subsequently (last year) in Brantford. The recent meeting was in Keokuk, Iowa. This is the first time the body has met west of the Mississippi, and the experiment of going so far away from the centre was not a successful one.

Those present were chiefly Iowa men. Though the place of meeting was close to the borders of Illinois, few came to it from that State. Fewer still came from Missouri, though that state was also contiguous to the place of meeting. Michigan had only one representative, Colorado one, Ohio three. All the other states were unrepresented. Ontario sent two delegates, Rev. W. F. Clarke, of Guelph, and Mr. R. McKnight, of Owen Sound, registrar of the county of Grey.

The association met October 29-31, holding eight sessions. It was called to order on the morning of the first day, by the President, Hon. R. L. Taylor, of Lapeer, Michigan, a gentleman educated for a lawyer, but who drifted into bee-keeping, and is now one of the foremost apiculturists in the United States. A full report of the proceedings would occupy too large an amount of space and only a brief *resume* of the more important matters can be attempted. Interesting details of "Fifty years Progress in Apiculture," were given in a paper by T. G. Newman, editor of the American Bee Journal. "Apiculture Journalism" was discussed by Mr. W. Z. Hutchinson, editor of the Bee-Keepers' Review, and a higher standard of bee-periodical literature strongly urged. The president's address which was not delivered until the second session, glanced at the past honey season, the markets and various general matters, but was chiefly taken up with suggestions about incorporating the association, and making due preparation for the approaching world's fair at Chicago.

A paper was read on the "Bee Pasturage of America," by Mr. A. I. Root, editor of Gleanings in Bee Culture. Its main purport was the newer and less known plants that yield honey. The white sage of California; the mesquite, a small shrub or tree, bearing edible pods, and flourishing in Arizona, Texas,

New Mexico, and other parts of the United States; the Spanish needle, which grows abundantly in the Middle and Southern States; sweet clover, teasel, rape, and mustard were successively spoken of and their honey-producing qualities described. In the discussion that arose on the paper, it was generally agreed that it would not pay to raise crops for honey alone, and that bee-keepers must largely depend on wild flora growing in waste places.

Dr. A. B. Mason, of Auburndale, Ohio, read a paper on "The Apiarian Exhibit at the World's Fair in 1893," which gave rise to a large amount of discussion, and resulted in the appointment of a committee which reported at a later stage of the meeting. "What I don't know about bee-keeping," was the subject of a humorous paper by Dr. C. C. Miller, of Marengo, Illinois, formerly a practising physician, but now an apiarian specialist. The one practical point brought into prominence was, that notwithstanding the great progress made by their pursuit, bee-keepers have much to learn. Rev. W. F. Clarke read a paper on "The Work of the Association: its past and its future." It enumerated a number of benefits that had accrued from the organisation, and pointed out how much its usefulness might be augmented by making it more truly representative of the best and most advanced thought in apiculture. A volunteer essay was contributed by Mr. Allen Pringle, president of the Ontario Bee-Keepers' Association, on "Foul Brood," calling attention to the prevalence of this terrible scourge of bees, and detailing what had been done in the province of Ontario by legislative enactment and vigilant inspectorship to check the progress of the evil.

The question, "Is it best to use full sheets of foundation in brood and surplus combs?" was introduced in a paper by Mr. Eugene Secor, of Forest City, Iowa, and had the effect of bringing out the views of a large number of bee-keepers in regard to this matter. Considerable difference of opinion was manifest. Some were in favor of using full sheets of foundation in both brood and surplus frames, and starters in section boxes. A few used narrow strips in brood frames, and full sheets in sections. "Fixed frames *vs.* suspended ones," was the next topic. It was brought forward by Mr. E. R. Root, of Medina, Ohio, who, having recently taken a tour among eastern bee-keepers, was surprised to find fixed frames in extensive use, and had been led to reconsider his preference for suspended frames in consequence of his observations. "The condition necessary to secure a honey crop," by Prof. A. J. Cook, of Michigan State Agricultural College, dealt chiefly with atmospheric influence, which often lessened or wholly spoiled the harvest, when other conditions were apparently favorable. This is one of the difficulties of bee-keeping which human agency is powerless to overcome. "In an apiary run for honey alone, are Italians or hybrids preferable?" was the subject of a paper forwarded by Mr. C. F. Muth, Cincinnati, Ohio. The author was warmly and even enthusiastically in favor of the pure Italian race of bees. Hybrids do sometimes develop a better aggregate of good qualities than the Italians, but they cannot be bred with any certainty, and often betray bad qualities, especially that of vicious temper. The uniform amiability of the Italian race, added to their many other excellent points, render them, on the whole, the most desirable strain of bees now available. Hybrids have usually warm champions at these conventions, but this time very little was heard in praise of them.

A question drawer was in operation, and many topics were suggested by its contents. Too many of them, however, had to do with elementary bee practice, with which the time of such a meeting should not have been taken up. Introducing queens, bee cellars; out-door wintering, doubling up colonies, sugar stores, migratory bee-keeping, combination of bee-keeping with other pursuits, the proper space between brood combs and the protection of bees from the inroads of rats, mice, and black ants, were among the more important queries considered.

The coming world's fair proved a troublesome topic, and was not settled without much difference of opinion growing out of the matter, being mixed up with the question of incorporating the association. The necessity of a government grant in order to make a creditable display forced incorporation to the front, it being felt that it was unlikely that public money would be given to an organisation that had no legal standing. The Ontario delegates contended that each state or territorial association should seek incorporation and apply for a grant of public money as the bee-keepers of their own province had done, and that then a fund for exhibition expenses should be formed by each state or territorial body contributing its quota. They also pointed out the impossibility of Canada being a joint applicant to the United States Government for an act of incorporation. Very little heed, however, was paid to these representations, and a committee was ultimately appointed to seek incorporation for the Association, and to fix its headquarters at Chicago, Ill. It is very questionable if the Eastern States will consent to this arrangement, and be content to revolve, like so many satellites, around the State of Illinois, and the city of Chicago. It is quite certain that if this plan be consummated, Canada will be forced to retire from a partnership which has been pleasantly maintained for a score of years.

We visited a farm and apiary on the Illinois side of the river, about four miles from Keokuk, the place of meeting, which has a wide reputation, and is a remarkable illustration of the possibilities of bee-keeping. The establishment is carried on by Charles Dadant & Son. Mr. Dadant, senior, emigrated from France to this country many years ago, and took up eighty acres of land, on which he still resides. Accustomed to bee-keeping in his native land, he commenced an apiary in a small way, and carried it on as an adjunct to his little farm. From humble beginnings, the apiary has grown until it now comprises about 400 colonies of bees. At an early period in the use of comb foundation, the Messrs. Dadant commenced the manufacture of this requisite, now in such large demand among bee-keepers. During the present year they have worked up no less than 80,000 pounds of bees-wax into comb foundation. The net profits of their apiary and factory last year were $5,000. Their home is very pleasantly situated in a natural grove, under the grateful shade of which their 400 colonies of bees are distributed, presenting the appearance of a miniature city. The little farm is worked after the fashion of a large garden. There are ten acres of grapes. Part of the crop is sold for table use, and the remainder made into wine, which is sweetened with honey, and retailed at the low price of $1 per gallon. The Messrs. Dadant, both father and son, are intelligent, wide awake and energetic men, who have evolved large results out of small beginnings, in a line of things which too many short-sighted farmers consider beneath their notice.

All of which is respectfully submitted,

(Signed)

W. F. Clarke,
R. McKnight,
Delegates.

ELECTION OF FOUL BROOD INSPECTORS.

The meeting having decided to elect these officers instead of delegating the duty to the Board of Directors, which the Act makes optional with the annual meeting,

It was moved by D. A. Jones, seconded by A. Laing, and carried, that Wm. McEvoy be the inspector again under the Foul Brood Act, for the current year.

Moved by D. A. Jones, seconded by J. Myers, that Samuel Bray be the sub-inspector. Carried.

CANADIAN BEE-JOURNALISM.

Mr. F. A. Gemmill, representing the Perth County Association in this matter, read a paper by J. E. Frith on the above subject, of which the following is a summary :

The growth of bee publications devoted to the apiary was first sketched, and the journals were divided into two classes, private and public, the former comprising those published in the interests of some large dealer or company, while the latter were run on their merits as periodicals and for the benefit of the people generally. Private journalism had done much good for the apiary industry in the past in Canada, but it was now time for the assertion of independence. Private interests should no longer control the utterances of any public journal. The object of the public journal should be to make known the merits of such apparatus and methods as would be of benefit to those engaged in the business. Freer and less biased discussions would result from the establishment of such a periodical, while "booming" would be minimised, as individual interests would not dominate as in the case of a private journal. The markets would be improved, as they would not be affected by literary puffing and local considerations would not influence the editor. A public journal would have more weight with the government, as it would then indeed be the mouth-piece of the apiarists. Governments cannot be expected to accept private opinion as public sentiment. This was very conspicuous in the application for foul brood legislation, as the work had to be done entirely through public representatives. Had we a public journal ten years ago foul brood would be extinct today, instead of a raging epidemic. Our wants, needs, difficulties and failures could be made known, and it would not be very long before experiments at public expense for the public good would be inaugurated. The ups and downs, failures, expenses and difficulties would be shown in their true light by a journal conducted in the public interests. Societies of various kinds conduct their own journals for the common good, and with success. In fact their society periodical is their great bond of union and strength, and it keeps the whole fraternity abreast of the times. Why should not the bee-keepers of Canada have a common journal ?

The Directors were instructed by the meeting to appoint a committee to consider the paper and report at the next annual meeting—the Board subsequently appointing Messrs. Gemmell, Frith and Corneil for that purpose.

MANAGEMENT OF OUT APIARIES.

Mr. C. W. Post, of Murray, read a paper on the above subject as follows :

In writing on the above topic, or in locating apiaries, there are many things to be taken into consideration. In localities that are favored with a good average flow of fall honey and other conditions favorable, I think it is more profitable to locate permanently and thus save the time and expense of moving the bees and surplus receptacles. On the other hand you will often find localities that will give a heavy surplus of white clover

and basswood honey, but after that is over there is nothing for the bees to do for the balance of the season but rob, plunder and consume the honey they have on hand, and in many cases require to be fed their winter stores. In the latter case it pays to move them to more favorable localities, not entirely for the amount of honey they may gather but so they will go in winter quarters in far better condition. I will give my actual experience during the past season in running two out apiaries in localities as above mentioned. In one place I have an apiary permanently located ten miles east in Prince Edward county, while the other I moved out and returned home in a car load lot. My house apiary is located on the shore of Weller's Bay on the narrow isthmus that joins Prince Edward county to the mainland, now made an island by the construction of the Murray canal and but a few rods from Weller's Bay station on the Central Ontario railway. This locality is an excellent one for buckwheat and golden rod honey, but not so good for white honey. So I decided to try the experiment of running a car-load of bees north on the line of the C.O.R. for the white clover and basswood crop, and return them home in time for buckwheat and golden rod. During the latter part of last winter I made arrangements with the Superintendent of the Central Ontario railway to run a carload of bees north to any point that I wished to locate south of Marmora station. I went to work, and during the winter and early spring got everything ready to carry out the experiment. On the 12th June I took a trip north over the road to select a locality, and settled on one at the Midland Railway Junction and on the premises of B. O. Lott, Esq., of Anson, P.O. I commenced to prepare the bees for moving on the 16th of June as follows: I use the Langstroth hive with hinges to bottoms. I have $2\frac{1}{2}$ in. hole in the centre of bottom boards and $1\frac{1}{4}$ in. hole in the centre of the back ends; these holes are covered on the inside with wire-cloth, and the outside is covered by a thin slide; each hive is provided with a wire-cloth cover, the whole size of the top of the hive tacked on a frame made of 1 in. stuff. I secured the frames from shifting by tacking wire nails through ends of frames. I then nailed on the wire-cloth covers. On the 19th June I had them all ready to load on the car, in the evening of that day closed up the entrances and loaded up a spring waggon to be ready for an early start next morning. We were up and at it the following morning at sunrise, and had the car loaded at 9 a.m. ready for the ten o'clock train. I loaded the bees in the end of the car next to the engine with the back ends tight against the car, and placed them two tiers deep on the break joint principle with strips between them. My two sons aged 14 and 16 years helped me to load the car, and the youngest went along with me to help to care for the bees on the road. At 10 a.m. we pulled out and started on our journey. I was furnished with a good stock car, and our load consisted of 92 colonies of bees, 184 top stories filled with combs and foundation, honey extractor, wheelbarrow stands in the flat and other things too numerous to mention. The only attention the bees required was to water them, which I did by springling water over them, and for this purpose I used about 10 gallons. We arrived at our destination at 3.30 p.m. Mr. Lott was on hand with a long spring wagon, and we unloaded them and drew them to his place, a distance of $\frac{3}{4}$ of a mile in two loads, the first load consisting of 56 colonies. The next day I placed them on their stands and fixed them all up, and put on top storey filled with drawn combs, but left off the queen excluders, and they stored honey very fast the same day. I examined them all carefully, and there was not a particle of brood destroyed in moving them. There was brood in all stages, and plenty of eggs in every hive, and I don't think that there was one quart of dead bees in the whole lot. I returned home by train the same evening. The next visit made was the 2nd July, and I found them in good shape. The first set of combs was nearly filled, so I set this first top storey off on a sun cap and put on queen excluders, and set on an empty top storey, and placed four frames in it from the top storey taken off and alternated the combs with full sheets of foundation. When I found any eggs or young larvæ in the combs, I placed them in the second stories. I left them with two top stories on each hive; I then levelled all the hives with a spirit level, and went home. The next week I went through them again and, as I expected to find, the foundation in the lower top stories was well drawn and partly filled with honey, while in the upper set of combs, some of the foundation was not drawn. This time

I changed them over and put the bottom on the top. This, as I had great fears it would do, taxed their patience too much and gave them the swarming fever, but as the queens were all clipped there was no loss of bees, only the necessity of watching them for a few days. As the swarms issued, I gave the queens away for the watching, and in a few days I went through and gave each colony a cell ready to hatch from the best colonies, first destroying every cell in the hive, and not a colony failed in getting a queen. About this time, July 21st, basswood was beginning to blossom, and I extracted the white clover, and took 6,500 lb. The top stories were placed on the hives again, but the basswood was almost a failure here. I extracted again the fore part of August, and got 1,600 lb. of inferior honey. I then prepared them for the home journey. As I extracted them, I selected six of the strongest combs from the top stories of each hive, and left ten frames in the other top and set them away for the season. I then spaced the six frames at equal distances, and secured them by driving 1½-in. wire nails through the ends of the frames, and set a top story on each hive and secured it to the body of hive by two wire nails through the side cleats nailed on the wire cloth covers, closed up the entrance and they were ready to ship. I loaded the car on the 13th of August, and started for home at 4.50 p.m. I arrived home same evening at 9 o'clock and unloaded them and had them on their stands before 5 a.m. next morning ready for the buckwheat, of which there was hundreds of acres in full bloom a short distance from my apiary. Of my other out apiary I will say nothing, except that it was run on the same principle as the one described. There were the same number of colonies. I had two sets of drawn combs for each hive. They gave me a surplus of 5,300 lb. extracted honey. Not a swarm issued last summer, and they are in good condition for winter.

Unfortunately, there was no time at the disposal of the meeting to discuss this paper, as train time was rapidly approaching and necessary business had to be done.

A vote of thanks was passed for the use of the court house to the city authorities and the meeting adjourned.

DIRECTORS' MEETING.

Before separating the new board of directors held a meeting for organisation, etc., the vice-president in the chair.

W. Couse was reappointed secretary and R. McKnight treasurer.

The president, treasurer and secretary were appointed the executive committee.

The president and secretary were appointed the printing committee.

The president was appointed a delegate to attend the Central Farmers' institute annual meeting.

A. W. Humphries was appointed delegate to the Western Fair association.

Messrs. McKnight and Emigh were appointed delegates to the Toronto Industrial.

Mr. McKnight was appointed to arrange for premiums for members for the year.

The president, vice-president and James E. Frith were appointed a committee to consider the danger of the introduction of foul brood into Canada from the importation of bees, and if found desirable, to take such steps as will insure the protection of bee-keepers through quarantining imported bees when deemed necessary.

Two hundred dollars were appropriated for affiliated societies, no society to receive more than $30.

A grant of $25 to the Toronto Industrial towards apiarian prize list was made; and a grant of $10 to the Western Fair for a similar purpose.

Messrs. Gemmell, Frith and Corneil were appointed a committee on bee-journalism.

Next annual meeting will be held in London 5th, 6th and 7th January, 1892.

The board then adjourned.

THE POULTRY ASSOCIATION OF ONTARIO.

To Honorable JOHN DRYDEN, Minister of Agriculture :

SIR,—The seventeenth annual exhibition of the Poultry Association of Ontario was held in the skating rink, in the town of Bowmanville, January 5th to 9th, 1891. All classes were fairly well represented with the exception of Javas. Some of the pens were magnificent, while all the birds were in first-class trim and showed to advantage.

Bowmanville being east of Toronto resulted in enticing a number of visitors and exhibitors from the eastern part of the province to see the exhibition and purchase stock. The exhibitors were from all parts of Ontario, and combined to show what Canada could do in the breeding of fancy and useful poultry.

Poultry breeding has now become one of our most important industries, but to get the best results, farmers and others must import more birds, adding to their fowls year by year so as to get new blood in their stock, thus gaining in vigor and size, and securing better returns in eggs and flesh. Both these qualities were fully developed in the various breeds at the show. Since the holding of our exhibition many Canadian fanciers have attended some of the most important poultry exhibitions in the United States, in most cases winning on every specimen shown. This fact goes to prove that Canada is not behind her neighbor in the matter of fancy poultry.

The following gentlemen were chosen by the directors to perform the difficult task of judging poultry, viz. : Messrs. Sharp Butterfield of Windsor, T. H. Smelt of Woodstock, and L. G. Jarvis of Port Stanley ; and on pigeons and pet stock, Mr. Ham Cooper of Hamilton. They gave general satisfaction, performing their respective duties well and in less time than at any previous exhibition, as the score cards and prize tickets were on all coops and cages by Thursday noon. The judging was by the New American Standard Perfection, assuming one hundred points as a perfect bird. Mr. Smelt's score card was used, which is a great improvement on the old score card formerly used at our exhibitions. The directors, having profited by the experience of former officers, divided the classes more evenly with the judges, and thus overcame the difficulty of not having all the birds scored before the close of the show. This resulted in getting the score cards up in good time, and gave the visitors an opportunity of studying the anatomy of the bird. It likewise gave the exhibitors a chance to sell their exhibits, and to the buyers an opportunity to study the defects, in order to make a selection as to improvement in their stock. As to quality of exhibits, it was said by the oldest exhibitors that this was one of the largest and finest exhibitions ever held by the Ontario society.

All classes were divided into their respective varieties and exhibited as single birds. Asiatics included Light and Dark Brahmas, Buff Partridge, White and Black Cochins and Langshans. These classes were well filled with magnificent birds, and were reported by the judge to be as grand a lot as he ever saw. Light Brahmas were well represented. Darks were not quite so large in number, but the quality was equally as good, some of them weighing twelve pounds a piece. Brahmas are the largest variety of poultry we have. They lay a medium sized egg, with dark shell, and yolk which is said to be of the best flavor ; they also lay a large number of eggs and are not inveterate setters.

In Cochins all colors were fairly filled with good birds. The Buffs were an extra large class, and as for quality they were the grandest lot of Buff Cochins that were ever in the show pen. The judge had all he could do to award the prizes. Langshans were out in large numbers, there being some thirty-three in the class. This breed has been improving greatly and is becoming more popular with the fanciers in

general, as it is to be found in four out of every five breeders' yards in America. The birds mature early, and the pullets lay when five or six months old, and are one of the best winter layers to be found. They are also an excellent table fowl, as they are of plump form and will weigh up well and fatten early. The males make a good cross with the Black Spanish hens, as they are much larger than the Spanish; they are hardier and mature much quicker. This cross makes a good general purpose fowl for the farm, as it has the size and laying qualities combined in one.

Of Dorkings there are three varieties—Silver Grey, Colored and White. There was an average number exhibited, but the quality was extra. They are medium layers and are noted for their square build and flesh-producing qualities, giving an abundance of meat on the breast; they are greatly preferred in England.

Game fowls were well represented, including all colors—Black-red, Brown-red, Golden and Silver Duckwings, Pile and Indian, the latter being new varieties. They are very large, and one cock weighed twelve pounds. They are just what the farmer wants to cross with his common fowls for market purposes, as they mature early.

Plymouth Rocks were large in number and the quality was good, including Barred and White. They are counted one of the best general purpose fowls in existence, and are to be found on nearly all farms throughout Canada. They mature early, are good layers, and are also good table fowls, with yellow skin and shanks, which make them the best variety as to meat for the Canadian markets.

Wyandottes were shown in large numbers, and were of excellent quality, including White, Silver and Golden-Laced. This variety owes its origin to America. They are not bred so extensively as the Plymouth Rocks, but as a general purpose fowl they rank next. They lay about the same number of egg, but not of so large a size. The color of the Silver and Golden are much admired, especially when one sees a large flock of them together on the green lawn of a fancier of the Wyandottes.

Spanish fowls were well represented, being one of the oldest varieties we have in Canada. They are good layers of large white eggs, but being somewhat tender they cannot stand the winter season, and consequently are not extensively bred in Canada. They are one of the most handsome varieties we have when bred to perfection, with their large red combs, white face and black plumage.

Minorcas were out in large numbers and the quality was extra. This variety resembles the Spanish, with the exception of not having the white face. Being hardier they are better adapted to the country. They lay a large white egg, and mature very fast. There are two colors, black and white.

Leghorns were not shown in very large numbers, and the quality was only medium. All colors were represented, the rose combs taking the lead. This is one of our oldest varieties, and ought to be shown more extensively than they are at our winter shows. They mature earlier than any other breed in existence. Pullets lay at four months, and they bear confinement well and lay the largest number of eggs of any breed. They are non-setters, and by crossing with the Brahmas, Cochins or Langshans, they make excellent farmers' fowls.

The Andalusians were out in larger numbers than usual, and the quality was extra. This breed is becoming more popular. They are good layers, and being non-setters are valued for their laying qualities, as they lay a large white egg and bear confinement well.

Houdans were well represented both in quality and numbers. This variety belongs to France. They are good layers and non-setters, and are a fine table fowl, which makes them a favorite variety to breed.

The Polands are considered to be the oldest of our domestic poultry, as well as the handsomest. They were represented by eight varieties. They are non-setters and good layers, and mature early. This class was well represented in number and quality. One pullet scored 98½ points out of a possible 100, this being the highest scoring bird in the show.

Hamburgs were shown in large numbers and of good quality, consisting of Golden-spangled, Silver-spangled, Golden-pencilled, Silver-pencilled and Black. They are very good layers. This breed ranks in size next the Bantams, and being of a wild disposition they are very hard to confine to limited quarters.

Bantams were out in full force, including Black-reds, Brown-reds, Duckwing and Pile game ; also Golden and Silver Sebrights, Black African, Polish, Japanese and Pekins. The Bantams are bred in large numbers for fancy. They are excellent layers and make the very best of mothers for young chicks.

The Turkey class was well filled and the birds were of excellent quality, some of them weighing as much as 40 pounds apiece. Turkeys are chiefly bred by farmers, and large shipments are made annually in the fall to the United States, from which considerable revenue is derived.

In Geese all classes were well filled and were of good quality. The Toulouse (grey), and the Bremen (white), make excellent varieties to cross with the common goose as they are of great size, increasing weight and quantity of feathers.

All varieties of ducks were well represented, including Aylesburys, Pekins, Rouens and Cayugas. The Aylesburys were of large size and of extra quality. The Pekins, which are the best layers of the duck family, were of large size and extra good quality, and are more extensively bred than any other. The Rouens are nearly as large, and are somewhat of a plumper build, but they are not quite as good layers.

All varieties of pigeons were well represented, making the largest exhibit ever held in Canada. Pet stock birds were out in great varieties and of excellent quality.

THE ANNUAL MEETING.

The annual meeting was held on Thursday, January 8th, the third day of the Exhibition, when Bowmanville was selected by a large majority as the place for the next Exhibition, and the following officers and directors were elected :

President.—J. W. Dutton, Bowmanville.
First Vice-President.—Allen Bogue, London.
Second Vice-President.—William Barber, Toronto.
Secretary.—J. M. Hern, Bowmanville
Treasurer.—J. J. Mason, Bowmanville.
Directors.—J. B. Archibald, Bowmanville ; W. R. Knight, Bowmanville ; John S. Moorcraft, Bowmanville ; Wm. McNeil, London ; George S. Oldseive, Kingston ; John Cole, Hamilton ; D. C. Trew, Lindsay ; James Main, Boyne, and C. F. Wagner, Toronto.
Auditors.—Thomas A. Duff and H. B. Donovan, Toronto.
Delegates to Industrial Exhibition.—Joseph Dilworth and C. F. Wagner, Toronto.
Delegates to Western Fair.—George G. McCormick and Jno. H. Saunders, London.
Delegates to Central Fair.—John Cole and P. H. Hamilton, Hamilton.

The next meeting will be held in Toronto during the Industrial Exhibition, for the purpose of revising the premium list and the appointing of judges for the next Exhibition.

J. M. HERN,
Secretary.

FARM POULTRY.

By W. B. Tegetmeier, in the Journal of the Royal Agricultural Society of England.*

Forty years ago the Royal Agricultural Society offered a prize for the best essay on the rearing and management of farm poultry. This was awarded to Mr. William Trotter, of Healey Mill, Hexham, for a very practical and useful article on the subject. Since the date of its publication a great impetus has been given to poultry keeping by the establishment of competitive shows for fancy varieties. At these shows, however, useful properties have been almost entirely ignored, and prizes have been awarded for accuracy of marking in feather, symmetry of comb and other fancy points having no reference whatever to the value of fowls as market or table poultry, or as egg-producers. In fact, it is hardly too strong an assertion to maintain that every breed which has become a fancy or show variety has been deteriorated in practical value. The produce of eggs in particular has been utterly neglected, and many of the breeds which, before the era of poultry shows, were valued as large egg-producers, are now almost useless in that particular.

Half a century since, Spanish fowls were commonly seen in many of the large stable and farmyards about London, being kept solely for their abundant production of large white eggs. They are now known as the worst layers of any non-incubating variety, and some of the hens that have figured largely as prize-winners have never laid an egg. Amongst the incubating breeds Cochins were at one time regarded as the most prolific layers, being absolutely credited by some with the faculty of laying two or even three eggs per day. For the last forty years they have been bred solely for feather, and the result is that this breed, once possessed of certain useful properties, is now valueless except as a fancy fowl. Its introduction into our poultry yards has in fact done more harm than good to our native breeds, inasmuch as, while it has lost its own prolificacy, its deficiency of flesh upon the breast has tended considerably to depreciate the value of our table poultry with which it had been crossed.

Since the introduction of fancy poultry the importation of eggs, more especially from France, has gone on increasing to an enormous extent, a fact which some persons seek to account for by the supposition of the existence of large and extensive poultry farms in France. This belief is so thoroughly grounded in the mind of the public, that scarcely a year passes but poultry farms are started. These generally last about a couple of seasons, at the end of which time the capital of the founders is exhausted, and all the plant and what remains of the stock is distributed by the hammer of the auctioneer.

Poultry farms have been tried in England under every variety of condition. Large portions of land have been devoted to their service, and have in some cases been gratuitously given for the purpose. In others extensive ranges of buildings have been erected according to various plans, but in every instance the result has been the same—disastrous pecuniary failure. Numerous accounts of suppositious poultry farms in France have appeared in English journals; but they have had no existence except in imagination. Mr. Charles L. Sutherland, one of the assistant commissioners of the Royal Commission on Agriculture, devoted special attention to the subject in 1879 in the course of his investigation into the agricultural condition of West Central France, and he thus describes the result of his enquiries:

"It is a commonly received idea in England that there exist in France huge poultry farms where fowls are kept by several hundreds, and it has been over and over again urged on English farmers to adopt this poultry farming on a gigantic scale as some sort of means of alleviating the present depression and enabling them to make money. A long acquaintance with the chief French poultry-breeding district as well as answers to enquiries I have from time to time made on the subject, enable me positively to deny

* Journal of the Royal Agricultural Society for March 1891, pp. 67-82.

the existence of such establishments. The greatest number of heads of poultry that can be kept profitably on a single farm varies from two to three hundred. If a greater number than this is kept the ground becomes poisoned, and it is found impossible to rear chickens. Whenever large poultry farms have been started in England, as for instance at Bromley in Kent, they have failed and chiefly owing to the above reason, a reason perfectly well-known to and understood by all practical poultry keepers. The manner in which so many fowls are reared and eggs produced in France is as follows, independently of course of climatic influences which must be held to be of some little account. Every peasant proprietor, every *bordier*, with perhaps two or three acres of land keeps fowls the produce from which is collected by dealers who scour the country. In this way a large number of fowls in the aggregate is kept, but they are scattered about all over the country; and so well is the necessity for change of ground understood in the districts where poultry rearing is a special industry, that great sacrifices are made by the breeders to secure fresh ground on which to rear their chickens."

There can be no doubt that poultry would be much more extensively and profitably reared by the small farmers and cottagers in our own country than is now the case, and far better table fowl could be produced. The great drawbacks to the profitable keeping of poultry are identical with those alluded to by Mr. Whitehead in his valuable "Hints on Vegetable and Fruit Farming," issued by the Royal Agricultural Society. These he states to be "the excessively high rates charged by the railway companies for the carriage of produce, and the unsatisfactory modes of distribution. In the existing circumstances, the producers get the minimum value, while the consumers have to pay the maximum price. The pernicious system of salesmen and middlemen, and the routine of markets hinder enterprise and check production." If poultry were consigned to the markets the producer has no check whatever on the middleman, and whatever the price to the consumer may be, he gets a very inadequate return. But in spite of these drawbacks it is believed that the cultivation of poultry may be largely and profitably extended, if it be conducted in accordance with profitable rather than fancy considerations.

Fowls.

The first point to be considered in the keeping of poultry is the accommodation that can be afforded them. The practice of allowing fowl to roost in the trees, though very conducive to their health and high condition, is one that is obviously rarely practicable; but with regard to a house no particular form or character is necessary. Stalls of an unused stable or any ordinary shed can with little or no expense be converted into a poultry house as advantageous as the most expensive. The arrangements in ordinary houses are eminently unsatisfactory. Usually perches are made one higher than the other, the topmost being near the roof; the result is a two-fold injury. Fowls retain their original instinct of roosting high up in trees, remote from their enemies. Consequently all ascend to the highest perch, fight for places, knock one another down and, as they fall perpendicularly, injure and frequently break the keel of the breast-bone. When descending from the trees in the open, the fowl has the power of flying a long distance and comes to the ground gradually. When dropping from a high perch in a confined building it comes with a violence to the ground, strikes the feet against the floor, which in heavy birds induces "bumble feet" and is also apt to break the breast-bone.

These evils may be avoided by putting all the perches on one level, about three or four feet from the ground, when there will be no quarrelling for places and the fowls can be caught when required with much greater facility. In this case there must be no access to high rafters or cross beams up to which fowls can fly. The nest-boxes which are to be seen in the country poultry houses are usually placed on rows or shelves which are sometimes in tiers, one above the other. No arrangement can be imagined better calculated to insure the injurious dryness of the eggs, and to favor the generation of vermin which infest the sitting hens and nests.

The nests, in accordance with nature, should be on the damp ground so that the eggs may be cooler below than above. A bushel of mould or a thick green turf kept in its place by two or three bricks makes the most efficient and healthy nest. They may also be made in boxes or in old market baskets filled with moist earth. These can be covered over with an ordinary circular coop so that the sitting hen is not molested by the others. If a hen lays away stealing a nest in a hedge or under a corn stack, or any other obscure situation, the eggs should never be touched if chickens are desired; as soon as the hen has laid her full clutch she will sit, and bring out a far stronger and healthier brood than will be produced under any more artifical circumstances. The exposure of the eggs to the weather does not, as many people imagine, injure them in the slightest degree, for when a hen sits under these circumstances she usually hatches every egg.

If only one place can be devoted to both the hatching and laying fowls, it is necessary to divide the former from the latter by a piece of wire-work, for if the laying hens are allowed to intrude upon those that are hatching, fighting—tending to a great destruction of eggs—ensues. Where it is practicable, it is always exceedingly desirable to set two or three hens on the same day. When they have sat a week the eggs should be tested and those which are not fertile removed. Many instruments under various names have been devised for this object, but none of them are superior to a piece of stiff cardboard, as the cover of a book, having an oval hole cut in it slightly smaller than the egg to be examined. This is readily used with an ordinary lamp at night. The eggs should be carefully removed from under one of the hens taken to a dark room then examined. The cardboard is held upright between the eye and the light, and the egg is placed against the hole. If the light shines through it and it is clear, having the same appearance as a new-laid egg, it is not fertile, and it is worse than useless to replace it under the hen, as it occupies space and is liable to be broken and soil the other eggs. Those eggs that are fertile and contain chickens are perfectly dark and opaque, except at the larger end where the air space is to be seen.

When two or three hens are set upon the same day and the eggs are examined at the end of the week, the clear ones being removed, it frequently happens that a sufficient number are taken away to enable the eggs of two hens to be given to one, or the eggs of three hens to be given to two, when a fresh sitting can be given to the hen that has been deprived of her batch. The eggs should hatch at the expiration of three weeks, viz.: on the 21st day. The less interference that takes place at this time the better. Occasionally the life of a weakly chicken unable to get out of the shell may be saved by assisting it, but there is no doubt that more chickens are destroyed by interfering with the sitting hen on the twenty-first day than are saved by any assistance rendered. The hens should be left in the nest until the next day when the young chickens will be strong, dry and active. The hen should then be put under a coop with her brood; if possible in a sunny place, as under a south wall.

The first food for the chicken should be egg and milk (the clear eggs removed from the hens answer admirably for this purpose). Each egg should be beaten with a couple of tea spoonfuls of milk, and set into a custard-like mass by the side of the fire or in the oven. This should not be given to the chickens until the hen has been abundantly fed with corn and has satisfied her own hunger. For other food I much prefer to use a little canary-seed or Egyptian dari to crushed grits, which are apt to become rancid from the external covering having been removed. Bread and milk can also begiven to the chicks, and sweet meal and milk; but much loss in rearing chickens occurs by the use of old meal which has been exposed to the air after grinding, and has become pungent and acrid.

The practice of cooping hens and chicken, though in many cases indispensably necessary, cannot but be regarded as an evil. The hens have no power to scratch for worms and grubs which form the natural and by far the most advantageous food for the young. The chicks again are fed day after day in the same place, and constantly pick up food contaminated by their own dung, a practice which is certain to induce disease.

It is often alleged that hens allowed at large with young broods wander so much as to "drag them to death." This, however, is only the case when the hen is not well

fed, and she has to seek for food for herself as well as worms for her chicks. In health and vigor no chicken can compete with those that are produced by a hen who steals a nest under a hedge, and brings out a clutch of strong and robust chickens, with which she returns to the homestead when they are two or three days old. If chickens must be confined, it is much better to put each coop into a temporary run made by unrolling a coil of wire-work, which can be shifted each day on to the fresh ground, a proceeding of very great advantage. Under these conditions the chickens are out in the early morning sun, instead of being shut up in the close air of a fowl-coop for some hours after they are awake, as is usually the case when the hen is confined.

The practice of tethering hens by one leg, which is frequently adopted by gamekeepers who rear pheasants, is one that may advantageously be introduced into poultry keeping. At the present time the custom is largely followed of giving chickens artificial food, which is often of very highly spiced and stimulating character. In my opinion no practice can be more objectional. No dried animal food can equal the natural diet obtained by the hen for her chicks if she is allowed liberty, and high spiced substances are neither natural nor desirable as food for chickens. The utilisation of the waste house-scraps is most valuable. Bread soaked in milk, potatoes from the table, etc., and very small quantities of meat may be given. Care should be taken not to give fowls at any age too much animal fat ; this is specially important as regards laying hens.

The temporary runs that I have recommended can be placed anywhere about the farm buildings, or still more advantageously in a garden where the young chickens can wander at will, and find much wholesome food without doing any damage. An orchard is also an exceedingly useful place for coops or runs, as well as for the older fowls. The advantage of placing fowls in an orchard is twofold. They destroy large numbers of injurious insects, and at the same time fertilise the ground with their droppings. If an orchard is divided into two parts, one of which is used for fowl keeping and the other not, it will be found that the former is much more productive than the latter, the circumstances being equal. The late Mr. Mechi, of Tiptree Hall, used to allow his fowls to roam freely in his cornfields, and he always maintained that they did so with great advantage to themselves and with no injury to the corn.

In determining the most profitable breeds for a small farmer or cottage proprietor, we have first of all to consider whether eggs or market poultry are the most important consideration. In some places eggs may pay much better than table fowls, and in others the reverse. If eggs are wanted, a non-incubating breed should be kept, as these lay a much larger number of eggs than hens that habitually sit. Formerly Spanish were largely used for this purpose, but their value, as before stated, has been utterly destroyed by their being solely cultivated as white-faced fancy fowls. The common black Mediterranean breed, known as Minorcas, are amongst the very best layers at the present time, provided that ordinary farmyard specimens and not show breeds, bred solely for size and regularity of comb, are selected. Leghorns, or a somewhat similar breed, have been, since their first introduction from America by myself, in 1868, so closely interbred and shown as fancy fowls, that their size and vigor have much deteriorated. Their general color is white, but recently they have been crossed with game fowls, to produce what are called Brown and Pile Leghorns, by which their vigor has been considerably increased. Andalusians, birds of the Spanish style, are also good layers, but they are now bred more exclusively for fancy markings than for profitable considerations. Spangled Hamburghs, or so-called pheasant fowls of the North of England, were formerly most profitable layers, but they also have been so exclusively bred for feather, that their valuable properties have been greatly lessened.

On the whole I should be inclined to recommend ordinary farmyard black Minorcas as the best breed that a small farmer can have, if the production of large white eggs is desired. I am sure, however, that no breed of fowls in existence will produce on the average, anything like the number of eggs which is sometimes stated as a common result. If a farmer can obtain an average of one hundred and fifty eggs per annum from his stock, he may consider himself to have done very well. In many localities, as near towns and other populous places, it will be found desirable to use every effort to obtain

new-laid eggs in the early part of the year, when they often fetch very high prices. For this purpose reliance must be placed on early hatched chickens, as the May broods do not lay freely in the cold weather.

When birds are required for market or the table, Mediterranean birds, such as Andalusians, Minorcas, and Leghorns are of very small value, not carrying much meat on the breast or being capable of furnishing plump and saleable chickens. For table poultry, Dorkings have a very great reputation, but the markets of London are chiefly supplied with what are known as Surrey fowls, which have been derived from the old-fashioned Dorkings that existed before the time of competitive shows. The modern show Dorking derived its greatly increased size from being crossed with the Malay breed, and what it gained in size it lost in quality and plumpness. It has also the disadvantage of being delicate. These defects may be removed by judicious crossing, and there is no doubt that the best table fowls at present produced in this country are those resulting from crossing the Dorking either with the old-fashioned English game or the Indian game. By these means a hardy, early matured, very plump breed is produced, and at the shows of dead poultry these birds have always proved superior to others put into competition with them. I have never, under any circumstances, not even in the shows of fattened dead poultry that take place in Paris, seen better specimens of large plump table fowls of the highest quality than those that were exhibited as the result of this crossing at the last dairy show held at the Agricultural Hall.

The Azeel, or Indian fighting cock, is an extraordinarily plump, close-feathered and heavy bird, and also crosses excellently with the Dorking and Surrey fowl; but it has two disadvantages—it is rather small, and of such exceedingly combative propensity that it is difficult to manage. Moreover, the hens are very indifferent layers, usually wanting to sit after laying ten or a dozen eggs. The crosses between the Indian game or the old-fashioned English game and Surrey or farmyard fowls are, on the other hand, as good layers as any variety of fowl that habitually sit. There is a preference in this country for table fowls with white legs; although a most absurd one, it must not be ommitted from consideration when breeding for the table, as to some extent at least it affects the price of market chickens.

I have not thought it necessary to mention particularly other crosses and other breeds of poultry as market fowl. Many farmers have sought to increase the size and value of their fowls by crossing with some of the Asiatic varieties, such as Cochins, Brahmas, Langshans, etc. It is quite true that size can be gained in this manner, but as the cross-bred birds are deficient in the amount of flesh on the breast, and carry a great deal of offal in the shape of heavy, coarse bones and useless feathers, the proceeding is not desirable. Crosses of this kind have found no favor in the eyes of our more practical neighbors, the French, nor are the birds appreciated by the feeders, who buy for the purpose of fattening for the market. There has been a run recently on a cross-bred breed, manufactured some few years since in America, and known as Plymouth Rocks. These being hardy fowls, and for sitters abundant layers, they met with considerable favor in this country, especially as their well-marked plumage allowed them to be exhibited as fancy fowl. Their yellow skin and want of quality and plumpness render them, however, not adapted for market fowl in England. In America, where a good roast fowl is a rarity, chickens are mostly used as "broilers" when young, being split down the back and cooked on a gridiron, when the bright yellow skin of the Plymouth Rock is not objectionable. At present the fashion in fancy poultry has tended in favor of a handsomely feathered breed termed Wyandottes, and the Plymouth Rocks are going out of fashion. As Wyandottes have been reared exclusively for feather making, they are, as might be expected, destitute of any merit as market fowls.

It may be asked what course should be recommended to a small farmer who has a stock of fowls and wishes to improve them, with the view of producing good birds for the table. In many cases it would not be desirable to dispose of present stock and buy an entirely new one. The plan would be expensive, to commence with, and there might be a difficulty at the present time in getting really good birds for useful purposes. Birds that are now advertised and sold are in nine cases out of ten fancy birds, and have not

been bred with any idea of their economical value. I should be disposed to recommend a small proprietor to look carefully over his stock; to get rid of all the small, weakly, undersized birds; to allow no pet fowls to remain, only those that are really the best of the stock; and then, getting rid of all the male birds, to place in his yard a good close-feathered, short-legged Dorking or Surrey cock. At the end of the year this bird should be at once got rid of—killed and eaten, if he cannot be sold. The following year the best of the large pullets only should be allowed to remain. The cross-bred cockerels having been disposed of, a good heavy, short-legged Indian or old-fashioned English game should be obtained as the stock bird for the season. Each year in succession a new stock bird should be got, either Dorking, English or Indian game. For it is the constant inter-breeding which takes place in most farmyards that leads to the great deterioration of the size, condition and constitution of the poultry.

As none of the half-bred cocks are to be kept, it is desirable to sell them as early as possible. They realise more money when young, and should be prepared for the table and market at once. The best mode of doing this, although it is not always in the power of the small farmer, is to take the cockerels away before they attain maturity, as soon as the combs begin to shoot and before the curved tail feathers can be seen. If they can be placed together in a run far removed from any hens, they will grow into large size without losing quality as table fowl; whereas, if they are allowed to run with the other fowls, they are continually chasing them and quarrelling among themselves. They cease to gain in weight and lose very much in condition, the flesh becoming hard. But this separation of the sexes in chickens intended for the table is only practicable in farms of some considerable size. In every case it will be found desirable to sell off the cockerels, and those pullets that it is not desired to keep for stock, at an early period in their lives, or else to put them to fatten in the ordinary manner. If fattened in coops, the cockerels should be shut up as soon as the central tail feathers are noticed as curving over the others, and they should be fed upon meal and milk until they have obtained the desired fatness.

Fowls cannot, however, be fattened without care and attention. They should be shut up in coops raised from the ground on legs, the bottom bars being about an inch and a half apart, so as to ensure cleanliness. Not more than a dozen fowls at a time should be put up together in one coop. In front a wedge-shaped trough should be placed. This should be filled three times a day with coarse, fresh oatmeal mixed with milk. No more should be given at once than will be eaten up at the time, before a fresh meal is given. The troughs should be kept thoroughly clean. It is best to have two sets so that each can be scalded with boiling water every other day after use. At one end of the coop water should be given, and on the ledge supporting the trough a small supply of fresh clean gravel; a green turf may occasionally be put in the coop.

It is necessary to give these fatted fowls their first meal in the morning, at sunrise. If this meal is delayed until about eight o'clock the fowls have been hungry and restless for hours, during which time the fat of the previous day has been wasted in useless exercise. About a fortnight is generally sufficient to fatten fowls if these precautions are attended to. If the fowls are wanted fatter they may be kept up a week longer, during which time they may be given a little hard mutton fat, such as the parings of the loin, which may be put in the scalding milk with which the oatmeal is mixed.

If fowls are wanted exceedingly fat they must be crammed. On a large scale this is done by the aid of a cramming machine, of which Hearson's is the best that I have seen, but a small number may be crammed by hand, selecting those that have been put up to fat for a fortnight. In cramming, the oatmeal is mixed with boiling milk (to which a little mutton fat may be added if thought desirable), sufficiently stiff to be rolled into sausage-shaped masses about two inches long and the size of the finger. Each fowl is taken out in succession, held in the lap, the beak kept open with the thumb and finger of the left hand; the sausage-shaped mass of meal should be dipped into milk and placed at the back of the throat and pushed down with the finger, the head being extended. About six or eight of these crams are given two or three times a day to each fowl, care being taken to ascertain that the previous meal has entirely passed out of the crop before

another is given. Should it not have done so the beak should be opened and some warm milk poured down the throat. The fowls thus fattened are usually spoken of in the London market as Surry capons, but the term is incorrect, as very few of them have been operated on, nor is the operation necessary. If the fowls are killed as hereinafter described, after sixteen hours' abstinence from food, it is not desirable to draw them before sending them to market, as they keep much better when not drawn, and consequently realise higher prices.

No fowl should be killed before it has fasted fourteen or sixteen hours. Those birds that it is intended to kill early in the morning should have both food and water taken away not later than four or five o'clock the afternoon before. If this is not done and they are killed full of food, it soon decomposes, turns the birds green, and renders them comparatively worthless. Even if the food has passed out of the crop and into the bowels, the fowls will not keep long, as the half-digested food in the interior causes them to spoil and gives them an exceedingly unpleasant flavor.

With regard to the mode of killing fowls intended for sale, the most universal practice in England is to break their necks. This should be done by seizing the legs of the fowl in the left hand and the head in the right, the back of the bird being upwards and the comb in the hollow of the hand. If the legs of the bird are then held against the left hip and the head against the right thigh near the knee, by strongly extending the fowl, and at the same time bending the head suddenly backwards, the latter is dislocated from the top of the neck, and death results instantaneously, all the large vessels being torn across and the blood escaping into the skin of the neck. Muscular contractions, however, remain for some minutes, during which time the fowl, if put down, knocks itself about, bruising the flesh; it should therefore be held in the hand or hung up by a string round the legs to a hook in the ceiling. The fowl having been killed should be plucked whilst warm; in fact the professional killers proceed to remove the feathers immediately after dislocating the neck, as then they come out very easily and the skin does not tear. There is no cruelty in doing this, even if it be before the muscular contractions have ceased, as the head of the fowl is removed from the body, being connected only by the skin, and all sensation is at an end. When carefully plucked the fowls should be placed on their backs, the hocks being tied together, the wings twisted behind the back, and the neck allowed to hang down so that the fluid blood accumulates in it. Under no circumstances should the breast-bone be broken, as it deteriorates very much the value of the fowl. It is needless to say that the legs and feet, if they are soiled, should be washed before the birds are sent to market.

The question may be asked whether it is most profitable to sell fowls from the yard or after being fattened. It depends entirely upon the mode in which they are kept and the local character of the demand. If fowls are well fed in the runs, more especially when the young cocks are kept separate from the hens, they are in the finest possible condition for the table, and the expense and trouble of cooping and fattening are saved; but if they are not highly fed, and if both sexes are allowed to run together, the flesh of the birds soon becomes hard and the quality inferior. Another precaution should be taken: it is the custom of many persons to use maize for the feeding of poultry. This contains a very large percentage of yellow oil, and when given to fowls in quantity it accumulates under the skin, rendering them of a yellow color, and consequently less saleable than they otherwise would be. There can be no doubt that the best food for making the flesh of fowls white and firm is that used in France, namely, buckwheat meal with milk; but it is hardly obtainable in this country, at least at a cost that would prove remunerative, and consequently either barley or oatmeal is usually employed. The latter, having a much higher percentage of fatty matter, is by far the more valuable. Great care should be taken that the meal used for fattening fowls has been freshly ground and is free from any pungent or acrid flavor. It should be mixed with milk in place of water. If skimmed milk is used the fatty matter which has been removed in the cream may be replaced advantageously by boiling up with the milk some hard mutton fat, such as trimmings of the loins.

Turkeys.

Turkeys, though exceedingly profitable, are not reared to as great an extent in this country as in France. The best breed to employ is the Cambridge crossed with the recently imported American, the crossing giving increased size and stamina. The hens when laying are very apt to conceal their nests, in which case they may be allowed to hatch their own eggs or the latter may be removed and placed under large fowls. The eggs should be tested like those of the fowls, on the eighth or tenth day, and only the fertile ones replaced in the nest. The chickens make their appearance on the twenty-eighth day. The young are rather delicate and should not be interfered with until the following day as they require no feeding for the first twenty-four or thirty hours. During this time, as is the case with fowls, the young bird is digesting the yolk which is drawn into the body at the period of hatching and furnishes the first food.

Great care should be taken at first to place the turkeys in a dry situation, such as the foot of a wall facing the south, or under an open shed. The first food of the young turkeys should be egg and milk, prepared as for fowls, but it should be remembered that turkeys are much more addicted to feeding on green vegetables than fowls are. If allowed to wander at will it will be noticed that they eat bitter herbs, such as dandelion and milky lettuces, and care little for whole corn. If ants' eggs can be obtained, such as are used by the gamekeepers for rearing pheasants, they will be found a most valuable addition to the food of young turkeys. But great dependence must be placed in the first instance on egg and milk, fresh meal and milk, lettuces run to seed, chopped dandelion and such insect food as the birds can obtain for themselves In wet weather, when the rain necessitates keeping them under cover, they should never be kept on hard ground, but the floor should be covered with dry soil or ashes. If the hens are cooped the coops should be moved every day, the grass around them for some considerable distance being mown, as is done in the case of pheasant rearing.

Turkeys are particularly subject to cold in the head, causing swollen faces and sore eyes, which rapidly develops into roup, a most infectious and troublesome disease. Care must be taken therefore not to allow hens to wander with the young birds early in the morning before the sun has dried the grass. Although delicate when young, turkeys are particularly hardy when old, and may be allowed to roost in the trees where they do much better than in houses. For the market it is not necessary to shut them up, but they may be fed on soft food mixed with skim milk two or three times a day. In France flocks of young turkeys are frequently put under the care of a girl, who drives them with a long pole on to the stubbles, where they feed on the corn which would otherwise be wasted. This method of using the waste corn which is always knocked out in harvesting is very much neglected in England, although some farmers, by having movable poultry houses on wheels, endeavor to carry it out. The rearing of turkeys is hardly to be recommended in damp localities, more especially where the soil is heavy and clayey; but in suitable situations, where sufficient amount of attention can be given to the birds during the first few weeks of their lives, there is no form of poultry that pays better as they always, about Christmas time or often before, realise very high prices in the market, and can usually be sold privately, when the profit does not go into the hands of the middlemen.

Ducks.

The usual mode in which ducks are kept in a farmyard is the reverse of advantageous. The plan followed should be that adopted in the neighborhood of Aylesbury and in the surrounding villages, where many tons of ducklings are reared annually and sent to the London markets, realising a most remunerative price. It is said that nearly £40,000 per annum is paid to the neighborhood for early ducklings. The breed chosen there is the white Aylesbury. The ducks are allowed on the water during the daytime, but kept under cover at night. To feed them well the best plan is to put the food, which is generally oats, into a pan of water. If highly fed they

will lay as early as December, and the eggs are particularly valuable for producing early ducklings. They are hatched under hens on nests made in the usual manner on the ground with soft, short straw which is much better than hay. The nest should not be allowed to become dry. If it does the eggs may be sprinkled with lukewarm water daily. No interference with the newly hatched brood should take place until the following day. At Aylesbury the ducklings which are reared for the market are not allowed to go into the water. After a few days three or four broods are given to one hen, and they are kept in small compartments in the rooms of the cottages of the rearers or in the sheds, each lot being separated by boards. The compartments are littered down with soft straw and kept particularly clean.

Unlike fowls, the young ducks require a very considerable proportion of animal food. Their first food should be hard boiled eggs, mixed with boiled rice and bullock's liver cut up into small pieces. This is given to them several times a day. After about a fortnight they are furnished with meal which is mixed with scalded chandler's greaves and they also have a due supply of oats placed in water. Fed in this manner they rapidly attain a very considerable size, and at the age of ten or twelve weeks are fat enough for market. These early ducklings command a very high price. In the first of the London season nine or ten shillings a couple, or even more, is frequently given for them. At the age of about twelve weeks they begin to moult and then the nourishment that they receive goes to the formation of new feathers and they do not increase in weight for another eight or ten weeks. Hence there is no advantage in allowing them to remain over twelve weeks before killing them. The secret of success is to feed the young ones as rapidly as possible and get them into the market at the earliest possible period. Those ducks that are intended for stock and not for killing, may be allowed to go into the water after some three or four weeks, but permitting them to swim when growing does not tend to increase their size.

The Aylesbury are by far the most profitable breed for market purposes, they are good layers and heavy birds. The Pekin breed, which has been introduced from China within the last few years, does not weigh as much as the Aylesbury nor is it as advantageous for market. The ordinary colored breeds of ducks are not so desirable, as the dark color of the down, which is difficult to remove entirely before sending them to market, renders them less attractive in appearance when killed. In purchasing Aylesbury ducks for stock the greatest care should be taken not to procure overfatted specimens in which the belly trails on the ground. These are never fertile, both drakes and ducks being absolutely useless.

Geese.

Geese will be found to be advantageous only under certain conditions. Where there is an opportunity for their grazing without expense in the short grass of commons they can always be kept to advantage. The large size exhibition geese are not to be recommended for farm purposes as they are by no means good layers and frequently are absolutely sterile. For the market the ordinary saddle-backed grey and white geese, if selected of good size and quality, are as good as can be employed. Geese as well as ducks should have a house to themselves, removed from the ordinary poultry. An unused pigsty makes an excellent goose pen. The nest should be made in the corner with mould covered with straw and large enough for the goose to sit comfortably without risk of crushing the eggs. The young are hatched after thirty days and may be fed at first with meal and milk. A little custard is also advantageous, and so are chopped lettuces and fine grass. The young at first need not be allowed to go to the water as a large milk-pan half full of pebbles and water is all that they require. After about a week no further care is necessary for them except giving them food. The most advantageous way to do this is to put the grain in a trough of water.

In the previous I have not alluded to the employment of incubators, which are now used to a very considerable extent by those who hatch large numbers of fowls. Whether incubators can be employed advantageously by the small farmer, depends

altogether on the number of chickens he contemplates rearing. I do not think an incubator of less size than one containing fifty eggs is at all desirable, as the external surface in proportion to the bulk renders it less easy to keep up a regular temperature, and a small number of eggs can be as easily hatched under hens. The most successful incubator is that manufactured by Hearson, in which the supply of heat is instantly shut off when it exceeds or even reaches the desired temperature which can be regulated to any required degree. I have tested this incubator for some years, and find that it hatches as large a proportion of eggs as the best hens. The eggs are placed in circumstances in which the natural conditions of hatching are most carefully reproduced. Moisture rises from below, the heat is given above and the natural temperature cannot possible be exceeded, however great the excess of heat from the lamp or gas employed in the machine. Incubators in which the heat depends on the supply of hot water once or twice a day are always altering their temperature, and are consequently unsuccessful. Others, in which the eggs are exposed to the fumes of hot air rising from the combustion of a lamp, are even less to be relied upon as the eggs do not hatch well, unless the air in which they are contained is particularly pure.

The impurity of the air is one of the chief causes why the eggs in an overcrowded or dirty fowl-house never hatch as well as those that are sat upon by the hens out in the open air, as under a hedge or any other concealed situation. An incubator, therefore, should never be placed in a close confined room, but in some compartment or shed where the atmosphere is particularly pure. The chicken breathes through the pores of the shell for many days before it escapes from the egg, and is particularly susceptible to foul effects in an impure atmosphere in the early stages of existence.

Whether or not an incubator can be used depends entirely on the requirements of the farmer, but should it be determined to employ one, it is most desirable that an efficient instrument should be selected, as the use of cheaply constructed machines will only end in disappointment.

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO

1890

PARTS I, II, AND III.—AGRICULTURAL STATISTICS.

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NINTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

PARTS I, II AND III.

To the Honorable Minister of Agriculture :

Sir,—I have the honor to present herewith Parts I, II and III of the ninth annual report of the Bureau of Industries, being the Agricultural Statistics of Ontario for the year 1890.

I have the honor to be, Sir,
Your obedient servant,

C. C. JAMES,
Secretary.

Toronto, June 16, 1891.

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PART I.

THE WEATHER AND THE CROPS.

THE WEATHER.

A record of the atmospheric conditions of any year will generally furnish the key to the history of the crops for that particular season. One does not need to be very observant to know the meaning of an unusual lack or a too abundant supply of rain at critical periods in the life of a crop, for the effects of the consuming drouth or the destructive "drowning out" are readily apparent. The amount of snowfall also plays a considerable part in agriculture, being either a blessing or a blight to fall wheat—sometimes sheltering and sometimes smothering, while the absence of the friendly covering not only exposes the young wheat plant to injury but also leaves unprotected many tender vines and bushes in the orchard and garden. The variations of temperature and the undue presence or absence of sunshine during the growing period are also important factors in the welfare of our crops. It will therefore be seen that the weather tables have an important bearing in helping to account for the results of a year's yield on the farms.

TEMPERATURE. In the following table the temperature for each of the six months constituting the growing period (April to September, inclusive) is given for ten stations which, geographically considered, may be reckoned as fairly representative, together with the average for the nine years 1882-90 :

Months.		Saugeen.	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.	Province average.
		°	°	°	°	°	°	°	°	°	°	°
April ...	1890...	38.92	43.16	46.09	43.72	46.09	42.31	40.33	38.83	39.64	36.08	41.52
	1882-90	38.37	41.95	42.78	41.64	42.56	40.65	38.92	37.50	39.38	36.31	40.01
May	1890...	47.07	50.80	53.91	51.63	52.26	50.01	48.57	48.37	50.31	47.11	50.00
	1882-90	49.31	54.04	54.78	53.51	53.41	51.94	52.31	51.72	55.25	50.85	52.71
June	1890...	62.53	66.30	66.67	67.95	69.34	65.31	65.42	65.77	64.37	62.57	65.62
	1882-90	59.40	63.88	64.46	64.44	64.95	62.39	62.89	62.46	65.40	60.76	63.10
July	1890...	65.46	67.47	67.21	68.23	71.64	67.34	66.02	66.88	67.42	64.18	67.19
	1882-90	63.76	67.65	68.26	68.14	70.26	67.49	66.37	66.34	68.83	64.43	67.15
August..	1890...	61.43	63.45	63.20	64.17	67.19	64.49	61.89	62.40	64.14	58.27	63.06
	1882-90	62.49	64.70	64.99	64.69	67.83	65.27	63.22	63.16	65.32	60.95	64.26
Sept'r ..	1890...	54.15	57.66	59.39	57.42	59.71	57.46	56.07	55.41	56.08	51.18	56.45
	1882-90	56.23	59.33	58.72	58.25	60.44	58.30	55.94	56.05	56.90	53.05	57.32
Aver. for 6 m'ths.	1890...	54.93	58.14	59.41	58.85	61.04	57.82	56.38	56.28	56.99	53.23	57.31
	1882-90	54.93	58.59	59.00	58.45	59.91	57.67	56.61	56.20	58.51	54.39	57.43

The average temperature of the province for the six months was .12° below that of the nine years. There was a higher record in London, Woodstock, Stoney Creek, Toronto and Gravenhurst compared with their respective averages for the nine years period, while Saugeen exactly equalled its own average. April was a comparatively warm month, every station excepting Rockliffe showing an increase in temperature, whilst that of the province exceeded its average for the nine years by 1.51°. May, on the contrary, was 2.71° cooler than usual, each station showing a drop ranging from .77° at London to 4.94° at Ottawa. June experienced a higher temperature than the average at every station excepting Ottawa. In July there were four stations higher and six lower than their own averages for the nine years, but the record for the province was .04° above its average for the series of years. The record for this the hottest month of the season was 67.19°. August was a colder month than usual at every station, and the temperature for September fell below its average, although London and Lindsay exceeded their figures for the nine years.

SUNSHINE. The table following gives the sunshine record at five stations for the six months April-September for 1889 and 1890, together with the averages for the eight years 1883-90. The hours of possible sunshine (calculated for Latitude 45°) will be found in the last column of the table.

Months.	Woodstock.	Toronto.	Barrie.	Lindsay.	Kingston.	Province averages.	Sun above horizon in Lat. 45°.
	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
April 1890....	199.0	229.3	169.1	223.4	229.0	210.0	406.4
April 1889....	178.9	189.8	170.1	209.5	197.1	189.1	
April 1883-90.	192.2	196.4	166.1	205.5	194.7	191.0	
May 1890....	182.6	184.7	143.7	172.6	189.0	174.5	461.1
May 1889....	197.1	202.3	197.6	198.3	204.1	199.9	
May 1883-90.	202.6	220.5	195.0	218.4	215.8	210.5	
June 1890....	253.5	265.7	238.4	252.8	263.3	254.7	465.7
June 1889....	169.3	181.3	111.7	171.9	187.9	164.4	
June 1883-90.	239.4	263.3	226.3	257.3	244.7	246.2	
July 1890....	289.8	304.3	243.1	272.9	292.0	280.4	470.9
July 1889....	274.1	303.2	271.2	298.4	274.6	284.3	
July 1883-90.	268.2	289.6	255.8	280.9	269.4	272.8	
August 1890....	240.5	249.5	218.7	229.7	234.8	234 6	434.5
August 1889....	240.7	229.8	215.6	229.3	222.9	227.6	
August 1883-90.	230.6	253.7	214.7	236.1	248.2	236.6	
September 1890....	197.2	209.4	169.5	210.2	189.4	195.2	376.3
September 1889....	189.8	203.9	159.2	198.9	177.6	185.9	
September 1883-90.	198.3	212.4	143.5	205.2	198.7	191.6	
Totals 1890....	1,362.6	1,442.9	1,182.5	1,361.6	1,397.5	1,349.4	2,614.9
Totals 1889....	1,249.9	1,310.3	1,125.4	1,306.3	1,264.2	1,251.2	
Totals 1883-90.	1,331.3	1,435.9	1,201.4	1,403.4	1,371.5	1,348.7	

The number of hours of sunshine registered in the province for the six months was barely 52 per cent. of the possible, but it was .7 of an hour more than the average for the eight years 1883-90. Barrie and Lindsay fell below their average, but the other three stations more than made up for the loss. The highest record of sunshine was that of Toronto, which was 1,442.9 hours, or 93.5 more than the average for the province. The least sunshine was registered at Barrie. May fell greatly behind its record of last year and also its figures for the eight years. July had less sunshine than in 1889, but more than its average for the series of years. August exceeded its record of 1889, but did not equal its average for the eight years. April and June, however, each surpassed their records, both for the previous year and their average for the series of years.

Precipitation. As has already been pointed out the matter of precipitation during the winter months is of importance from an agricultural standpoint, more particularly to winter crops. The following table gives the fall of rain and snow by districts during the five winter months for 1888-9 and 1889-90 and the average for the nine years 1882-90 :

Months.	West and South-west.		North-west and North.		Centre.		East and North-east		Province averages.	
	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
November 1889...	2.91	9.1	1.76	13.6	2.53	9.1	2.29	12.3	2.37	11.0
November 1888...	2.79	1.7	2.87	8.3	2.70	2.0	3.25	3.5	2.90	3.9
November 1882-9.	2.37	6.6	2.08	14.8	2.17	5.8	1.97	9.6	2.15	9.2
December 1889...	3.99	0.3	2.35	13.2	4.01	2.1	2.45	9.5	3.20	6.3
December 1888...	1.24	5.4	1.14	8.5	0.95	3.2	1.00	5.6	1.08	5.7
December 1882-9.	1.59	14.3	1.24	21.8	1.53	11.7	1.15	14.8	1.38	15.6
January 1890...	3.44	4.7	1.93	25.5	2.78	8.9	2.19	12.6	2.59	12.9
January 1889...	1.78	16.0	0.90	26.6	1.53	20.7	1.52	24.4	1.43	21.9
January 1882-90	1.38	16.8	1.11	29.8	1.34	18.4	1.06	22.4	1.22	21.9
February 1890...	1.82	6.2	0.85	20.7	1.88	9.1	1.86	15.4	1.60	12.9
February 1889...	0.41	19.8	0.18	30.6	0.31	16.8	0.15	27.1	0.26	23.5
February 1882-90	1.68	11.2	0.73	22.4	1.34	11.7	0.85	18.8	1.15	16.0
March 1890...	1.05	11.1	0.59	17.5	0.86	10.8	0.74	13.1	0.81	13.1
March 1889...	0.29	6.2	R.	6.9	R.	8.3	R.	4.5	0.08	6.5
March 1882-90	1.24	10 7	0.85	14.4	1.09	10.0	0 85	14.2	1.01	12.3
Total 1890...	13.21	31.4	7.48	90.5	12.06	40.0	9.53	62.9	10.57	56.2
Total 1889...	6.51	49.1	5.09	80.9	5.49	51.0	5.92	65.1	5.75	61.5
Total 1882-90	8.26	59.6	6.01	103.2	7.47	57.6	5.88	79.8	6.91	75.0

As one inch of rain is equal to about ten inches of snow the total precipitation of the province exceeded that of the previous year and also the average for the nine years. The rainfall during the five months was remarkably heavy, being nearly double that of the previous year, and 53 per cent. more than the average for the nine years. In the west and south-west and centre districts the fall of rain was especially great. There were 3.20 inches of rain recorded for the province in December, which was the wettest month, 2.59 in January and 2.37 in November, while in March only .81 inches fell. In the centre district in December 4.01 inches of rain were registered, and in the west and south-west 3.99 inches. The snowfall of the province was 5.3 inches below that of the previous year, and 18.8 inches below the average for the nine years. In no district did the snowfall equal its average for the series of years, and in the north-west and north only was the fall of snow greater than in 1888. The heaviest precipitation of snow was experienced in March, being 13.1 inches, while January and February are bracketted for second place with 12.9 inches. There was more snow in November and March than in the previous year or as compared with the average of the period of years for the respective months, but the midwinter months are greatly behind in their record of snowfall. The effects of the comparatively light fall of snow in December and January can be traced in the report of the condition of the fall wheat crop as it came out of the winter, more particularly in the west and south-west district, where the snowfall was but 0.3 inches in December as compared with an average of 14.3 for the nine years, and 4.7 inches in January as against 16.8 inches for the period.

Note.—The weather districts given in these tables are those of the Meteorological Office. The Centre is a circular district whose centre is a point in lake Ontario, about midway between Toronto and the mouth of the Niagara river, and embracing the counties of Welland, Lincoln, Wentworth, Halton and Peel, and portions of York, Ontario and Durham. A line drawn from the circumference of the circle through Guelph to Goderich is the limit between the West and South-west and the North-west and North districts, and a line from lake Scugog to Rockliffe, on the Ottawa river, is the limit between the North-west and North and the East and North-east districts.

The rainfall during the growing season, however, is of paramount inportance, and the following table furnishes an interesting study:

Month.	West and South-west.		North-west and North.		Centre.		East and North-east.		Province averages.	
	1890.	1882-90.	1890.	1882-90.	1890.	1882-90.	1890.	1882-90.	1890.	1882-90.
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
April	2.52	1.71	2.04	1.39	1.94	1.58	1.80	1.40	2.07	1.52
May	4.30	3.35	2.88	2.64	3.05	2.73	2.72	2.51	3.24	2.81
June	4.48	3.43	3.15	2.90	4.14	3.16	3.23	2.88	3.75	3.09
July	2.06	2.51	3.38	2.48	2.24	2.30	3.47	2.89	2.79	2.55
August	2.91	2.68	3.28	2.58	3.09	2.32	3.59	2.63	3.22	2.55
September	1.71	2.34	2.21	2.97	2.04	2.42	2.16	2.57	2.03	2.57
Totals	17.98	16.02	16.94	14.96	16.50	14.51	16.97	14.88	17.10	15.09

The precipitation was 2.01 inches greater in the six months than the average for the same time in the nine years 1882-90. Every district showed an increase in this respect. Each month also showed a greater rainfall, with the exception of September. June was the wettest month, 3.75 inches of rain falling, May came next with 3.24 inches, and August was third with 3 22 inches. In September only 2.03 inches were recorded, and in April the figures were but little higher, although considerably in excess of its own average. The rainfall for the six months was greatest in the west and south-west district and least in the centre district.

FARM LANDS OF THE PROVINCE.

Rural Areas Assessed. The figures given in the following table are for townships which are municipally organised, and are compiled from the assessors' returns. The acreage assessed and the acreage of woodland, swamp and waste land are for 1890, and the acres cleared are given for 1889 and 1890, the whole being presented by county groups and for the province:

Districts.	Acres assessed.			Acres cleared.		Acres woodland.	Acres swamp, marsh or waste.	Per cent. cleared.
	Resident.	Non-resident.	Total.	1890.	1889.			
Lake Erie	2,277,963	57,854	2,335,817	1,397,825	1,366,784	833,499	104,493	59.8
Lake Huron	2,211,600	63,249	2,274,849	1,328,701	1,301,764	735,835	210,313	58.4
Georgian Bay	1,926,367	86,176	2,012,543	1,041,859	1,027,155	774,631	196,053	51.8
West Midland	3,210,114	40,139	3,250,253	2,293,009	2,271,604	657,430	299,814	70.5
Lake Ontario	3,004,561	39,981	3,044,542	2,300,619	2,270,818	505,365	238,558	75.6
St. Law. & Ottawa	5,001,864	271,610	5,273,474	2,301,436	2,284,429	2,152,671	819,367	43.6
East Midland	2,471,635	177,554	2,649,189	839,472	824,450	1,428,118	381,599	31.7
North'n Districts.	1,351,022	226,592	1,577,614	155,778	138,104	1,255,898	165,938	9.9
The Province. 1890	21,455,126	963,155	22,418,281	11,658,699	.....	8,343,447	2,416,135	52.0
The Province. 1889	21,294,019	984,619	22,278,638	.....	11,485,108	8,451,181	2,342,349	51.5

The assessed rural area of the province is now 22,418,281 acres, which is an increase of 139,643 acres over the figures of the previous year. Several townships became

organised in 1890, and the increase in area assessed in the Northern Districts is 170,305 acres. The acreage of non-resident land is less than in 1889 by 21,464. There are 11,658,699 acres cleared, which is 173,591 additional to that recorded in the previous year, and an increase which is shared by every group. The total increase in cleared lands since 1882, according to the assessors' returns, was 1,485,987 acres or 165,110 acres annually. The highest percentage of cleared land is observed in the Lake Ontario counties, where it rises to 75.6, and the West Midland group comes next with 70.5 per cent. Only 9.9 per cent. is credited to the Northern Districts. The average for the province is 52.0 per cent., which is .5 more than the figures of 1889. The area in swamp, marsh, and waste lands shows an increase. This item has been very imperfectly taken by the assessors and further additions may be expected yearly until errors from this source are eliminated. This specially applies to the newer portions of the province.

Area in Crops. The following table shows the number of acres under staple field crops for each of the five years 1886-90, together with the averages for the last six and nine years. The column for 1885-90 is retained to keep the table uniform with that showing values in Part III. :

Field Crops.	1890.	1889.	1888.	1887.	1886.	1885-90.	1882-90.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Fall wheat	720,101	822,115	826,537	897,743	886,402	838,006	908,723
Spring wheat	601,753	398,610	367,850	484,821	577,465	538,327	569,426
Barley	701,326	875,286	895,432	767,346	735,778	762,174	764,365
Oats	1,882,366	1,923,444	1,849,868	1,682,463	1,621,901	1,750,631	1,643,490
Rye	103,061	90,106	84,087	68,362	67,779	81,948	107,610
Pease	781,206	708,068	696,653	726,756	703,936	710,450	659,685
Corn	223,836	187,116	222,971	163,893	156,494	187,024	190,855
Buckwheat	90,111	56,398	57,528	64,143	70,792	66,791	64,936
Beans	39,456	21,830	22,700	20,275	21,072	24,998	24,506
Potatoes	158,094	145,812	153,915	140,283	140,143	149,665	154,919
Mangel-wurzels	25,953	21,211	21,459	17,924	18,170	20,192	19,167
Carrots	11,977	11,261	11,524	9,110	9,267	10,360	10,486
Turnips	111,055	111,103	113,188	105,322	98,931	106,983	102,595
Hay and clover	2,462,002	2,386,223	2,292,638	2,280,643	2,295,151	2,330,791	2,261,664
Total	7,912,297	7,758,583	7,616,350	7,429,084	7,403,281	7,578,340	7,482,427

The steady increase in the total acreage of the staple crops of the province has been continued, the area being 7,912,297 acres, or 153,714 acres more than that of 1889, and considerably above that of any other year. The acreages of fall wheat and barley are less than in any year of the table, while spring wheat has made a tremendous spread compared with the area recorded for the three or four immediately previous. The area of oats, while less than in 1889, exceeds that of any other year. Rye has a wider area than in any of the years 1886-90, but it does not equal its average for the nine years. The remainder of the crops show greater acreages both as compared with the previous year and with their averages for the nine years 1882-90.

These crops together with pasture comprise about 90 per cent. of the cleared land, leaving one-tenth of the improved land to be devoted to orchard and garden, minor crops, etc.

The area devoted to the crops named in the preceding table (and for similar average periods) is here presented by groups of counties :

Year.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890.....	996,955	851,934	696,361	1,539,165	1,669,314	1,474,437	569,117	115,014	7,912,297
1889.....	949,859	812,757	719,473	1,481,308	1,667,961	1 450,920	582,343	93,962	7,758,583
1888.....	958,486	801,218	690,243	1,489,263	1,635,315	1,402,502	551,102	88,221	7,616,350
1887.....	932,076	781,833	656,184	1,455,376	1,609,981	1,371,322	539,460	82,852	7,429,084
1886.....	920,626	772,120	647,156	1,426,069	1,597,507	1,396,090	562,249	81,464	7,403,281
Average—									
1885-90	946,233	797,097	676,022	1,473,154	1,626,271	1,410,549	558,242	90,772	7,578,340
1882-90	927,502	780,734	666,086	1,460,168	1,614,649	1,390,527	556,620	86,141	7,482,427

The Georgian Bay and East Midland counties are the only groups which fall behind their acreages of the previous year, but all the districts in the table show an increase compared with their respective averages for the terms of six and nine years.

Area in Pasture.—The area in pasture is given in the appended table by county groups and for the province for each of the four years 1887-90, and also the rate of pasture land per 100 acres cleared in 1890 :

Year.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890	246,107	339,984	214,561	513,612	369,063	641,597	195,303	21,865	2,542,092
1889.....	249,623	319,428	221,087	511,618	410,416	685,401	191,194	19,195	2,607,962
1888.....	239,330	307,879	213,925	504,840	406,620	665,139	179,823	18,048	2,535,604
1887.....	240,586	296,316	204,903	512,349	404,893	667,034	186,850	16,008	2,528,939
Per cent. of cleared land in 1890	17.6	25.6	20.6	22.4	16.0	27.9	23.3	14.0	21.8

The Lake Huron, West Midland and East Midland groups and the Northern Districts show an increase in the area of pasture land, but the decrease recorded in the other four groups is heavier, the result being a shrinkage of 65,870 acres in the total area in pasture of the province compared with the previous year. The ratio of pasture to cleared land is 21.8 per cent. for the province, ranging from 14.0 in the Northern Districts to 27.9 in the dairying counties of the St. Lawrence and Ottawa group. The figures for these years do not include "bush" pasture.

PROPORTIONAL AREAS UNDER CROP. The relative distribution of the various crops per 1,000 acres of cleared land is given in the following tables by county groups for the years 1889 and 1890, together with the averages for the nine years 1882-90:

Districts.		Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.	Total.
Lake Erie ...	1890	138.6	16.8	33.7	132.9	10.0	60.2	71.5	8.6	21.7	205.0	10.5	1.2	.7	1.8	713.2
	1889	153.3	4.3	29.3	135.3	9.6	52.6	62.4	6.4	11.0	217.0	9.7	1.2	.6	2.1	694.8
	'82-90	170.6	9.6	30.1	127.7	9.3	47.3	72.6	7.8	12.7	211.0	12.4	1.0	.6	1.7	714.4
Lake Huron .	1890	81.1	22.8	49.9	168.4	1.3	79.0	10.2	1.8	.6	203.7	9.6	2.5	.8	9.5	641.2
	1889	97.7	9.2	53.7	167.3	.8	68.1	7.6	.6	.4	197.5	8.8	2.0	.8	9.9	624.4
	'82-90	122.2	30.3	51.7	151.0	.8	67.5	8.5	1.0	.5	194.8	10.7	2.0	.8	10.5	652.3
Georgian Bay	1890	64.0	67.7	44 5	170.5	3.9	82.6	3.2	1.5	.4	201.4	13.6	1.2	1.1	12.8	668.4
	1889	79.4	52.6	58.8	187.7	2.8	83.8	2.0	.5	.2	205.7	12.6	.7	1.0	12.7	700.5
	'82-90	82.0	77.1	55.0	156.9	3.0	79.8	1.6	.7	.3	195.7	14.0	1.0	1.1	12.6	680.8
West Midland	1890	84.9	31.4	62.0	177.5	2.5	74.5	14.7	1.3	.4	189.1	12.1	3.9	1.1	15.8	671.2
	1889	93.4	14.2	69.1	177.2	2.4	68.1	12.2	.8	.3	184.6	10.2	3.2	1.0	15.4	652.1
	'82-90	117.1	35.9	61.2	155.4	2.3	62.1	12.9	1.1	.6	186.5	12.2	2.9	1.0	15.9	667.1
Lake Ontario.	1890	53.5	85.0	111.6	142.2	12.3	78.8	15.1	11.9	1.1	181.5	14.6	2.6	1.3	14.1	725.6
	1889	64.4	54.0	155.3	143.1	13.4	71.7	14.0	7.8	.8	178.2	13.4	2.5	1.4	14.5	734.5
	'82-90	71.4	74.2	131.7	127.8	14.6	67.6	13.4	7.4	.9	181.4	14.1	2.3	1.3	13.0	721.1
St. Lawrence and Ottawa.	1890	4.3	54.6	34.6	178.8	12.9	37.2	12.5	14.5	1.6	268.7	16.7	1.1	.9	2.3	640.7
	1889	5.5	46.6	44.4	191.5	9.7	36.1	9.5	9.7	1.3	260.7	16.6	.8	.7	2.0	635.1
	'82-90	7.6	54.3	44.1	176.3	15.8	42.8	8.8	12.8	1.5	255.3	17.8	.8	.7	1.9	640.5
East Midland	1890	27.7	91.5	72.4	146.4	22.5	66.8	11.4	11.2	.9	200.8	15.1	2.7	1.2	7.3	677.9
	1889	39.2	71.4	111.9	168.7	17.1	63.2	10.2	5.5	.6	190.6	16.1	1.8	1.1	8.9	706.3
	'82-90	34.4	92.9	104.6	145.7	23.5	64.4	9.0	7.0	.7	192.5	15.5	1.5	1.0	7.1	699.8
Northern Districts ...	1890	5.8	47.8	14.3	171.7	5.8	78.4	2.5	6.3	.7	363.9	25.7	.3	1.2	13.9	738.3
	1889	5.3	50.7	11.7	187.3	7.4	75.3	2.9	2.9	.8	348.6	25.0	.6	1.1	18.0	737.6
	'82-90	4.9	77.4	15.8	163.4	8.2	72.0	3.0	4.6	.7	362.6	25.6	.7	1.2	18.3	758.4
The Province.	1890	61.8	51.6	60.2	161.5	8.8	67.0	19.2	7.7	3.4	211.2	13.6	2.2	1.0	9.5	678.7
	1889	71.6	34.7	76.3	167.6	7.9	61.7	16.3	4.9	1.9	208.0	12.7	1.8	1.0	9.7	676.1
	'82 90	82.7	51.9	69.6	149.7	9.8	60.1	17.4	5.9	2.2	205.9	14.1	1.7	1.0	9.3	681.3

The figures for the province show that out of every 1,000 acres cleared 678.7 are under crops specified, an increase of 2.6 acres compared with the ratio of the previous year, yet 2.6 less than the average for the nine years. The Georgian Bay, Lake Ontario and East Midland groups fall below their respective figures for 1889, and the West Midland, Lake Ontario and St. Lawrence groups are the only districts which surpass their proportion per 1,000 acres for the term 1882-90. For the province a decrease over the previous year is noticed in three staple crops, fall wheat, barley and oats, and also in turnips, carrots remaining the same, while every other crop shows an increase. The Lake Erie counties lead the other groups in the proportional area of fall wheat, corn and beans, the Georgian Bay in pease, the West Midland in mangel-wurzels and turnips, the Lake Ontario in barley and carrots, the St. Lawrence and Ottawa in oats and buckwheat, the East Midland in spring wheat and rye, while the Northern Districts, as usual, are away ahead in hay and clover and potatoes.

FALL WHEAT.

Correspondents writing in November, 1889, stated that owing to the drouth the condition of the ground was such that it was next to impossible to prepare stubble land for seeding. The most unfavorable reports came from the south-western counties, where the land had been exceedingly dry, hard and lumpy. It was stated, also, that a considerable portion of the seed had failed to germinate owing to a lack of sufficient moisture. A better tone was apparent in the reports from the midland and eastern counties, as there the soil was generally in good condition at seeding, and summer fallowed lands were looking very well. The young wheat was regarded as fairly healthy, but rather backward owing to slow growth, and fears were expressed that it had hardly made sufficient head to enable it to stand the rigors of winter. The presence of the wire-worm was occasionally mentioned in some of the eastern counties. In the spring the crop was reported as presenting a very uneven condition throughout the province. Some fields were exceptionally fine and others unusually poor in the same township and sometimes on the same farm, according to the soil, cultivation and physical aspect of the country.

The May bulletin contained the following summary of the condition of the crop: Throughout the west seeding was driven late into the fall on account of the drouth, and the acreage was somewhat reduced thereby. When winter set in the crop had hardly made sufficient headway to stand the alternate freezing and thawing of the mild winter which followed, with insufficient snow to protect the young plants. On this account the crop suffered more or less from winter-killing, and in the extreme west it was uneven and poor. Considering all these unfavorable conditions, however, the crop in other portions of the province may be said to have wintered better than was expected, particularly in Huron, Bruce and Brant, but the night frosts and cold, dry northerly winds and rains, commencing in February and continuing late into the spring, played havoc with the crop and greatly reduced its vitality and retarded its growth. On low, loamy soils the condition of the crop was very unpromising on account of the action of the frost, being patchy and delicate, but on light, rich loams where well underdrained, and especially where protected by bush or the lay of the land, and where the crop was got in early and the land well prepared, it generally presented a fine appearance. This was especially the case in Norfolk, Welland, Huron, Brant and a few other counties, while the worst reports came from Essex, Kent, Lambton, Lincoln and Halton. In these latter counties, Essex and Lambton more particularly, considerable fall wheat land was plowed up and seeded anew, and in many instances spring wheat was harrowed into bare patches amongst the fall wheat. The crop was considered backward in May, but little or no injury from insects had been reported.

A more cheerful state of affairs was outlined in the August bulletin, which reported that fall wheat throughout almost the whole of Western Ontario was of good quality and in every respect an unusually fine crop. In the Georgian Bay, Lake Huron and West Midland counties the crop was almost invariably reported good, notwithstanding the loss by winter-killing. In the counties east of Kingston and along the Ottawa river, where the acreage is rather small, the reports regarding both yield and quality were encouraging. While the great majority of correspondents made no mention of damage to the crop by drouth or insects, reports of slight injury by weevil and midge were made by a few correspondents in nearly every section of the province. The excessive rains of spring were followed by great heat, which brought on such a rush of growth that much rust and shrinkage was expected, but the damage was said to be slight, and it was thought that the sample would not be materially affected. The berry was generally reported plump, the straw bright and the crop the best for years. Cutting began from the 10th to the 15th of July in the more advanced counties, from the 15th to the 20th throughout most of western Ontario, and from the 25th of July to the 1st of August in the district east and north of Kingston. Harvesting weather was very favorable and the crop was housed in excellent condition.

In the reports sent in by correspondents in November the quality of fall wheat was more favorably commented upon than that of any other cereal, and many instances were given where the grain had gone some pounds per bushel over the standard

weight. The actual results of the threshing, however, showed that the crop did not average quite as high a yield per acre as was expected at the time of cutting. The following table shows the acreage and yield by county groups and for the province in each of the years 1889 and 1890, together with the average for the nine years 1882-90:

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	193,716	3,635,817	18.8	209,474	3,155,221	15.1	221,505	4,084,244	18.4
Lake Huron.....	107,765	2,247,001	20.9	127,201	1,811,876	14.2	146,249	2,825,766	19.3
Georgian Bay	66,705	1,206,527	18.1	81,508	1,336,949	16.4	80,232	1,622,787	20.2
West Midland.....	194,682	4,289,221	22.0	212,155	3,264,999	15.4	256,339	5,056,093	19.7
Lake Ontario.....	123,101	2,308,261	18.8	146,250	2,686,377	18.4	159,930	3,205,887	20.0
St. Law. and Ottawa..	9,952	159,925	16.1	12,521	231,359	18.5	16,543	296,073	17.9
East Midland.....	23,276	404,429	17.4	32,329	504,664	15.6	27,371	534,163	19.5
Northern Districts....	904	16,202	17.9	677	10,420	15.4	554	10,527	19.0
Totals.....	720,101	14,267,383	19.8	822,115	13,001,865	15.8	908,723	17,635,540	19.4

The area of fall wheat in the province in 1890 is only 721,101 acres, being 102,014 less than that of the previous year and 188,622 less than the average for the nine years 1882–90—a very heavy decrease in so important a crop. The falling off in acreage is general, being observed in every group except the Northern Districts, where the area is a trifling one at the best. The average yield per acre of the province, however, is a very good one, being 19.8 bushels, or 4 bushels more than the figures for the nine years, and 4.0 bushels more than the average yield for 1889. To this last fact is due the result that notwithstanding the great shrinkage in acreage the total yield for the province is 1,265,518 bushels more than that of 1889, although it falls greatly below the average gross yield for the nine years. The West Midland group, which has the largest acreage, also has the best yield per acre, the average for these counties being 22.0 bushels. The St. Lawrence and Ottawa group gives the lowest average yield, being only 16.1 bushels per acre. The Lake Erie, Lake Huron and West Midland groups each exceed their total yield of the previous year, and so, of course, do the newer Northern Districts, but not one of the old groups equals its average total yield for the nine years period.

The New Crop of Fall Wheat. There has been a considerable increase in acreage, and the condition of the ground at the time of sowing, except on clay land which was rather dry and stiff, was most suitable for a good start. The general appearance of the fields as correspondents wrote was such as to evoke frequent expressions of admiration. The chief cause for fear lay in the fact that the plant had made rather too rank a growth. Scattering mention was made of injury by the Hessian fly on early sown fields, and the wire worm and white grub were reported in a few localities, but the prevailing opinion was that a better outlook for the new crop of fall wheat had never been reported during the first week of November.

SPRING WHEAT.

The August bulletin, which was made up from reports sent in on or before the 12th of that month, stated that it would not be safe at that date to assert that the crop of spring wheat would be better than an average, for although the figures submitted as the anticipated yield averaged slightly above the standard, the reports of the condition of the crop by the same authorities were not so encouraging. When correspondents wrote harvesting had not been completed except in a very few of the more advanced townships, while in the counties where most of the spring wheat is grown a large proportion of the grain was at least a week from maturity, and its condition depended much upon the state of the weather between that time and the harvest. A majority of the correspondents declared the crop to be "fair" or "promising," and generally good on high land, but there was an almost unanimous complaint of much injury to low-lying wheat from the wet, cold and late spring. In some localities a blight which reddened the leaves was complained of, and in the central counties midge and weevil were accredited with doing much damage, but the majority of reports agreed that the crop had suffered but little from insects or drouth. The bearded varieties, especially Colorado, seemed to be most in favor, and White Russian, French Imperial and Wild Goose were more commended than the Fyfe seed wheats, whether of Scotch or Manitoba growth.

The November bulletin had a lugubrious tone when it spoke of spring wheat. It stated that the crop was a comparative failure, for while in some cases a good yield of fair quality was reported, the majority of correspondents spoke of a light return much below the standard weight. In the lake districts the midge did injury in addition to rust, and in the St. Lawrence and Ottawa counties the joint worm left evil effects. The following table gives figures of acreage and yield for 1889 and 1890, and also the average for the nine years 1882-90 :

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	23,548	310,647	13.2	5,911	85,803	14.5	12,421	181,356	14.6
Lake Huron	30,245	469,332	15.5	11,966	149,081	12.5	36,262	501,582	13.8
Georgian Bay.....	70,508	934,079	13.2	54,014	737,749	13.7	75,406	1,092,334	14.5
West Midland	72,049	1,192,801	16.6	22,206	426,573	13.2	78,662	1,164,069	14.8
Lake Ontario.....	195,498	2,323,621	11.9	122,676	1,841,946	15.0	166,151	2,638,523	15.9
St. Law. and Ottawa.	125,660	1,407,723	11.2	106,498	1,559,737	14.6	117,826	1,884,084	16.0
East Midland	76,801	936,894	12.2	58,882	782,276	13.3	73,905	1,060,093	14.3
Northern Districts ..	7,444	103,808	14.6	6,457	114,542	17.7	8,793	157,786	17.9
Totals.....	601,753	7,683,905	12.8	398,610	5,697,707	14.3	569,426	8,679,827	15.2

An increase in the acreage of this crop is seen in every county group, the area of spring wheat in the province being 203,143 acres more than in 1889, or an increase of 51 per cent. Although the acreage is larger than the average for the nine years, the small yield of 12.8 bushels per acre in 1890 does not permit the total yield of the province to equal its average for the period of 1882-90, for which term the average yield per acre was 15.2. The total yield of 1890, however, is 1,986,198 bushels more than that of the previous year. The best average yield is noted in the West Midland counties, being 16.6 bushels, and in the Lake Huron group the average is 15.5 bushels, but the Lake Ontario, St. Lawrence and Ottawa and East Midland groups fall below the average for the province. Notwithstanding a largely augmented acreage there is a falling off in the total yields of the St. Lawrence and Ottawa group and the Northern Districts compared with their respective yields of the previous year.

BARLEY.

Although the report concerning barley contained in the August bulletin was more or less anticipative, it proved to be so accurate in the main that it is here quoted in full: "Barley is somewhat light in yield and uncertain in color, so that taking into account the decreased area under cultivation the crop is likely to be 4,000,000 bushels less than the average, and probably not a great deal will rank firstclass. The wet, cool spring followed by the dry, hot weather at maturing time did a considerable amount of damage to this cereal, and unfortunately as the harvesting weather has been somewhat unfavorable in many localities, the grain has been discolored by rain both before and after cutting. The early varieties escaped this misfortune to a large extent, but otherwise the crop has suffered very generally to a greater or less degree. But a large proportion of the crop had still to be cut at the time of reporting, and it is difficult to state its precise condition in this respect. This was largely the case in the northern and eastern counties of the province, and it is to be hoped that the harvest has there been secured in a satisfactory condition. Reports respecting the imported two-rowed barley—of which small samples were sown by many farmers—are perhaps about equally divided for and against. It has been ascertained that this variety is from a week to ten days later in maturing than the ordinary six-rowed barley, but as it had been cut in hardly a single instance it was difficult to express a definite or reliable opinion upon it, and the reports are very guarded in this respect. So far however the evidence does not warrant the belief that it is in any marked degree superior to the ordinary varieties, in spite of the fact that it has been favored by a season of unusual rainfall and slow growth."

The November bulletin confirmed the reports of a considerable discoloration of barley, more especially among the late sown. In that bulletin, also, it was stated that there was a divided house on the question of the two-rowed barley which was being tested for the British market. While a few glowing accounts were given as to yield and quality, by far the greater number of returns classed it as no better than the six-rowed variety, and it has the disadvantage of taking from a week to ten days longer to mature. The result of the threshing proved that the yield was even lighter than was anticipated in August. Following is a comparison of acreage and yield by county groups and for the province for 1889, 1890 and the nine years 1882-90:

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	47,045	966,480	20.5	40,070	964,925	24.1	39,041	959,400	24.6
Lake Huron	66,347	1,613,851	24.3	69,908	1,734,729	24.8	61,895	1,643,581	26.6
Georgian Bay	46,358	1,119,210	24.1	60,443	1,535,281	25.4	53,823	1,358,320	25.2
West Midland	142,206	3,806,364	26.8	156,880	4,533,985	28.9	134,015	3,790,844	28.3
Lake Ontario.... ...	256,753	5,268,439	20.5	352,678	9,760,205	27.7	294,777	7,637,001	25.9
St. Law. and Ottawa.	79,616	1,569,872	19.7	101,545	2,461,962	24.2	95,812	2,292,100	23.9
East Midland	60,772	1,208,642	19.9	92,272	2,361,746	25.6	83,204	1,982,368	23.8
Northern Districts ..	2,229	47,311	21.2	1,490	33,555	22.5	1,798	42,120	23.4
Totals	701,326	15,600,169	22.2	875,286	23,386,388	26.7	764,365	19,705,734	25.8

Only 701,326 acres have been given to barley, which is 173,960 acres less than in 1889, and a decrease of 63,039 acres compared with the average for the nine years 1882-90. The average yield per acre for the province is unusually light, being but 22.2 bushels, as against 26.7 bushels in the previous year and 25.8 bushels for the nine years period. The total yield is therefore an exceedingly small one, being 7,786,219 bushels less than in 1889, and, as was predicted in the August bulletin, fully 4,000,000 bushels below the

average for the term of years. The decrease in acreage occurred in every group excepting the Lake Erie counties and the Northern Districts, but in the last named group the area is merely a nominal one. The West Midland counties average 26.8 bushels per acre (they also show the best average yield in 1889 and for the nine years), but no other group reaches the provincial average for either 1890 or the nine years. The poorest average yields are this year observed in the St. Lawrence and Ottawa and East Midland groups, neither of which reach 20 bushels to the acre.

OATS.

At the time correspondents wrote their reports for the August bulletin the oat harvest was only commencing, except in the south-western counties of the province, where operations were well under way. The opinion was generally expressed that the yield would be a light one, both in regard to pounds to the bushel and bushels to the acre. The straw was also described as rather short. As in the case of barley, the crop suffered severely from the wet and backward spring and the heat and drouth which followed. These conditions, together with a red, rusty blight which, attacked the crop very early in the summer, appear to have been the chief sources of injury. The largest amount of damage from all causes was reported from the southern lake shore counties, while in more northerly districts—particularly in the counties of Huron, Bruce, Grey and Simcoe—its condition was considered up to the average. In these counties the greater portion of the crop was still unripe at the time of reporting, but it presented a fine appearance, having largely recovered from the effects of the blight. Early varieties on well drained land have been most successful.

According to the November reports the oat crop proved a great disappointment, as the yield was not so large as was hoped for, and the berry was also quite small and light. The straw was considerably rusted, which injured it for feeding purposes. The blight left evil effects in various sections both east and west. The acreage and yield in 1889 and 1890, and the average for the nine years 1882-90, are as follows:

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	185,806	4,429,838	23.8	184,964	5,916,841	32.0	165,776	5,877,415	35.5
Lake Huron ..	223,749	6,507,605	29.1	217,777	6,636,698	30.5	180,804	6,286,961	34.8
Georgian Bay .	177,625	5,320,863	30.0	192,786	6,293,753	32.6	153,496	4,997,150	32.6
West Midland .	406,897	12,618,834	31.0	402,619	14,992,059	37.2	340,093	12,756,012	37.5
Lake Ontario..	327,206	9,215,067	28.2	324,884	11,870,318	36.5	286,131	10,276,569	35 9
St. L. & Ottawa.	411,408	10,530,752	25.6	437,487	13,171,243	30.1	382,761	12,198,526	31.9
East Midland .	122,936	3,428,369	27.9	139,070	4,730,060	34.0	115,867	3,599,451	31.1
Nor'n. Districts.	26,739	716,879	26.8	23,857	735,329	30.8	18,562	574,192	30.9
Totals.....	1,882,366	52,768,207	28.0	1,923,444	64,346,301	33.5	1,643,490	56,566,276	34.4

The oat crop falls behind its record of 1889 in both area and yield, the acreage being less by 41,078 and the total yield 11,578,094 bushels below that of the previous year. The fact that the average yield per acre was 5.5 bushels per acre more in 1889 than in 1890, however, has more to do with the shortage of the crop than the narrowing of the area has. Although the average acreage for the nine years was less than the area reported in 1890 the average total yield was greater, owing to the fact that the average yield per acre for 1882-90 was 34.4 bushels as against the lean record of 28.0 bushels in

the present year. Of the eight groups, five show a slight increase in acreage, but the decrease in the Georgian Bay, St. Lawrence and Ottawa and East Midland counties is greater by the figures already quoted. The highest average yield per acre is observed in the West Midland group, but even there it reaches only 31.0 bushels, which is 3.4 bushels below the average of the province for the nine years. In the Lake Erie group the average yield per acre was only 23.8 bushels, and in the St. Lawrence and Ottawa counties, where the acreage of oats is the greatest in the province, the average yield per acre is 25.6 bushels.

THE OAT BLIGHT. Prof. Panton, of the Agricultural College, was consulted respecting the blight on oats referred to by correspondents, and in a report on the subject to the Bureau he says: "Some time ago samples of affected grain were sent to me from the eastern part of the province, and I also noticed similar conditions elsewhere. It at first appeared as if an insect was the cause of the trouble, but in the specimens examined I saw none. Some observers have noticed in samples the pupa cases of the Hessian fly, but not in such numbers as to account for so general a blight upon the grain. In the cases where rust affected the blades, it is likely that this resulted after the plant had become weakened and its vitality so impaired as to render it liable to attack by a parasitic plant like rust. It seems to me that the trouble is due more to climatic conditions, such as frost or excessive moisture, than to insects or to parasitic plants, and at present I am inclined to the view that excessive moisture was largely to blame. As far as I can learn no definite conclusion has been arrived at regarding the cause of the blight, although it has commanded a good deal of attention both in Canada and the United States."

RYE.

The condition of this crop in May was reported as generally satisfactory. It had suffered more or less from winter killing, but not to such an extent as to impair the prospect for an average crop. Its growth, however, was a little backward in the east, where it is chiefly raised. According to the August bulletin rye had given a fair yield throughout the province wherever grown, and had already been well secured in most cases. In eastern Ontario, however, it was somewhat light on the ground, owing, it was said, to winter killing. What little mention was made of rye in the November reports was favorable. The acreage devoted to the cultivation of this crop, however, is very small, and it now holds a position of little more than local importance in the province. Following is a table showing the acreage and yield for 1890 and the previous year, and also the average for the years 1882-90.

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	13,994	201,896	14.4	13,142	161,139	12.3	12,011	185,714	15.5
Lake Huron.....	1,732	32,648	18.8	981	17,758	18.1	979	17,297	17.7
Georgian Bay	4,069	61,822	15.2	2,903	52,181	18.0	2,947	52,602	17.8
West Midland	5,649	93,785	16.6	5,449	78,643	14.4	5,110	83,943	16.4
Lake Ontario.....	28,273	386,172	13.7	30,548	458,854	15.0	32,722	483,038	14.8
St. Law. and Ottawa...	29,576	475,333	16.1	22,072	425,818	19.3	34,224	611,487	17.9
East Midland.....	18,858	294,881	15.6	14,074	220,020	15.6	18,681	292,023	15.6
Northern Districts.....	910	16,808	18.5	937	17,266	18.4	936	18,060	19.3
Totals.....	103,061	1,563,345	15.2	90,106	1,431,679	15.9	107,610	1,744,164	16.2

The area of rye, while 12,955 acres more than in the previous year, is 4,549 acres less than the average for the nine years 1882-90. The average yield for the year is 15.2 bushels, being .7 bushels less than in 1889, and exactly a bushel below the standard for the nine years. A decrease in the acreage is noticed in the Lake Ontario group and in the Northern Districts, but every other group shows an increase. The crop however, is not likely to increase very much in importance.

PEASE.

August reports concerning pease indicated that the crop would be a fair though rather uneven one. It suffered more than any other crop from the rains of May and June, and on low clay lands it was almost a failure. The straw was afterwards scalded by the hot, dry weather which followed, and this throughout the Lake Erie counties appeared to have materially checked the growth of the vine and the filling of the pods. The crop was pronounced a very poor one in that district, but throughout the rest of the province the yield promises to be not much behind the average. In the south-west a large portion of the pea crop had been harvested as correspondents wrote, and it was said to have been secured in good condition ; elsewhere operations were just about to commence. In the older portions of the province, notably in Essex, Kent and parts of Middlesex, the bug was more injurious than usual, but in other sections the pest had not extended its operations to any marked extent. Worms were also reported as doing injury in Huron, Bruce and Grey.

In the November bulletin it was stated that pease had been attacked in nearly every district by the bug, but the least complaints regarding the pest came from the river counties. While the crop suffered much from rain on low and undrained lands, on high and sandy soils a good yield was the rule. The table following gives the acreage and yield for 1889 and 1890, together with the average for the nine years 1882-90 :

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per. acre.	Acres.	Bushels.	Bush. per. acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	84,196	1,262,693	15.0	71,837	1,243,765	17.3	61,462	1,135,017	18.5
Lake Huron	104,950	2,223,672	21.2	88,652	1,629,066	18.4	80,766	1,763,329	21.8
Georgian Bay.....	86,074	1,868,911	21.7	86,065	1,889,918	22.0	78,021	1,668,356	21.4
West Midland	170,901	3,284,924	19.2	154,671	2,697,323	17.4	135,828	2,889,896	21.3
Lake Ontario....	181,216	3,538,243	19.5	162,758	3,029,343	18.6	151,278	2,997,392	19.8
St. Law. and Ottawa ..	85,596	1,717,316	20.1	82,426	1,677,185	20.3	92,949	1,802,716	19.4
East Midland	56,064	1,223,871	21.8	52,067	1,122,888	21.6	51,207	973,799	19.0
Northern Districts.....	12,209	269,683	22.1	9,592	219,749	22.9	8,174	187,619	23.0
Totals.....	781,206	15,389,313	19.7	708,068	13,509,237	19.1	659,685	13,418,124	20.3

This crop continues to grow in favor, an increase in the acreage being observed in every county group compared with the previous year, amounting in all to 73,138 acres. The yield per acre for the province, while .6 bushels higher than that of 1889, is .6 bushels lower than the average for the nine years 1882-90. The total yield is 1,880,076 bushels more than that of the previous year. The average yield per acre for the nine years is exceeded in the Lake Huron, Georgian Bay and East Midland groups and in the Northern Districts, but in the Lake Erie counties the remarkably small yield of 15.0 bushels per acre is returned. The largest acreage is found in the Lake Ontario group, and the crop is also very popular in the West Midland and Lake Huron counties.

INDIAN CORN.

When the August returns were sent in by correspondents there were indications of a favorable crop in Essex and Kent, the corn region of the province, and in parts of Elgin, Lambton and Middlesex. In the counties fronting on the lakes, between Elgin and Halton, the prospects were not so good, but elsewhere, and especially in the eastern part of the province, it was believed there would be an abundant supply of fodder corn. The crop was rather backward, however, owing to the wet seeding time and the cool spell which followed it. These conditions combined did a large amount of injury in the western corn district, where in a number of instances seed had to be planted a second time. The general drouth which set in later was also adverse to the growth, but the showery weather in the early part of August improved the condition of the crop, so that it was said to have recovered itself in large measure.

The November bulletin characterised the quality of corn as below the average. Owing to rainy weather it was rather soft and there was a tendency to mould in the crib. The acreage and yield for 1890 and the previous year are given in the following table by county groups and for the province, together with the average for the eight years 1882-90 :

Districts.	1890.			1889.			Yearly average for the eight years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	99,914	6,696,013	67.0	85,284	3,899,376	45.7	93,848	6,516,708	69.4
Lake Huron.....	13,590	793,611	58.4	9,877	402,988	40.8	9,831	597,472	60.8
Georgian Bay	3,346	182,062	54.4	2,003	96,414	48.1	1,539	81,650	53.1
West Midland.....	33,590	2,092,447	62.3	27,657	1,338,581	48.4	27,436	1,775,427	64.7
Lake Ontario.....	34,692	1,948,478	56.2	31,842	1,733,524	54.4	28,779	1,689,691	58.7
St. Law. and Ottawa.	28,764	1,792,316	62.3	21,679	1,326,955	61.2	19,195	1,094,587	57.0
East Midland	9,549	491,469	51.5	8,404	433,625	51.6	6,979	356,862	51.1
Northern Districts...	391	14,785	37.8	370	16,736	45.2	325	13,124	40.4
Totals.....	223,836	14,011,181	62.6	187,116	9,248,199	49.4	187,932	12,125,521	64.5

Corn in the ear is raised chiefly in the Lake Erie counties, where 99,914 acres, or about 45 per cent. of the entire corn area of the province, are given to the crop. The total acreage of corn is 36,720 more than in 1889, and every group has helped to swell the increase. The average yield per acre of the province while very far ahead of that of the previous year of failure, falls 1.9 bushels below the average for the eight years. The average yield of 67.0 bushels per acre in the Lake Erie group is 2.5 bushels more than the provincial average for 1882-90, but falls short by 2.4 bushels of its own record for the eight years. The total yield of the province, 14,011,181 bushels, looks large compared with that of the poor corn year of 1889, or even with the average for the eight years, but it is 3,425,599 bushels less than the magnificent yield of 1888.

BUCKWHEAT.

Correspondents had very little to say about buckwheat. This crop commands but a very limited area, being confined chiefly to a few counties in the Lake Erie, Lake Ontario and St. Lawrence and Ottawa groups, and the county of Hastings. The yield per acre was reported above the average, and the quality was described as good. The frost touched

the crop slightly. The acreage and yield for 1889 and 1890, and also the average for 1882 90, is given in the following table:

Districts.	1890.			1889.			Yearly average for the eight years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	12,029	253,371	21.1	8,773	164,100	18.7	10,006	202,351	20.2
Lake Huron.....	2,419	38,257	15.8	720	13,008	18.1	1,130	21,056	18.6
Georgian Bay	1,522	28,094	18.5	464	7,581	16.3	746	12,962	17.4
West Midland.....	2,990	59,942	20.0	1,743	32,473	18.6	2,322	45,490	19.6
Lake Ontario.....	27,280	605,902	22.2	17,614	344,931	19.6	17,044	373,858	21.9
St. Law. and Ottawa.	33,488	825,706	24.7	22,149	596,859	26.9	27,330	649,612	23.8
East Midland	9,402	219,012	23.3	4,569	104,831	22.9	5,499	123,708	22.5
Northern Districts...	981	23,436	23.9	366	8,795	24.0	500	12,621	25.2
Totals.....	90,111	2,053,720	22.8	56,398	1,272,578	22.6	64,577	1,441,358	22.3

The total area of 90,111 acres is 33,713 acres greater than that of the previous year, and 25,534 acres more than the average for the eight years. Every county group shows an increase in the acreage. This, together with the fact that the average yield per acre is .2 bushel more than in 1889, and .5 bushel more than the average for 1882-90, explains the largely augmented total yield.

BEANS.

Heavy rains delayed planting, and the crop was consequently in a rather backward condition when correspondents wrote in August. On well selected soils where care had been bestowed on their culture, beans were reported as giving excellent promise, notwithstanding the drouth of July, but lack of moisture told heavily against the crop on clay soils. In the few localities in eastern Ontario where beans are specially grown a splendid crop was anticipated. The autumn report concerning the crop was to the effect that it was hardly a fair yield, and that on account of wet weather it was late in ripening and difficult to gather. Very late beans were slightly affected by frost. The acreage and yield for 1889 and 1890, together with the average for the eight years 1882-90, are as follows:

Districts.	1890.			1889.			Yearly average for the eight years, 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	30,323	585,846	19.3	15,069	232,362	15.4	16,522	319,709	19.4
Lake Huron.....	729	11,278	15.5	473	8,662	18.3	577	11,783	20.4
Georgian Bay	429	8,424	19.6	215	4,300	20.0	240	4,426	18.4
West Midland.....	917	17,033	18.6	695	13,297	19.1	1,071	22,083	20.6
Lake Ontario.....	2,530	44,739	17.7	1,741	32,632	18.7	2,084	44,071	21.1
St. Law. and Ottawa.	3,660	75,209	20.5	2,999	70,656	23.6	3,207	76,181	23.8
East Midland	757	16,491	21.8	533	7,914	14.8	556	10,748	19.3
Northern Districts...	111	2,321	20.9	105	2,070	19.7	74	1,540	20.8
Totals.....	39,456	761,341	19.3	21,830	371,893	17.0	24,331	490,541	20.2

Fully three-fourths of the bean area is to be found in the Lake Erie group, where 30,323 acres (over double its own acreage of last year) are returned for the crop, the county of Kent alone now devoting nearly 25,000 acres to beans. The average yield per acre of this great bean growing group of counties is exactly the same as that for the remainder of the province, which is 19.3 bushels, being 2.3 bushels more than in the previous year, but .9 bushel below the average for the eight years. The total area of beans is 17,626 acres greater than that of 1889, and 15,254 acres of this increase is noted in the Lake Erie group. The total yield for the province is over double that of the preceding year.

FIELD ROOTS.

Thunder storms in midsummer, quickly followed by unusually hot weather, got the soil into a rather baked condition, and threatened the success of turnips, mangels and carrots. Frequent rains in the early part of the growing season also fostered weeds to an unusual extent, which rendered the cultivation of roots exceedingly difficult. In the autumn bulletin correspondents (under date of November 10) wrote that the recent fine weather had generally been taken advantage of by farmers to raise and house roots of all kinds, and that it was likely that these crops would be saved in good condition.

Potatoes. The August bulletin stated that low lands, owing to the copious rains of spring, proved bad for potatoes, much of the seed having rotted. On high and well-drained soils a more cheering condition was reported. Premature ripening of the vines was complained of in various sections, but more especially in the eastern part of the province. Several correspondents writing in August expressed a fear that the tubers would be under-sized, and according to the November bulletin their fears were realised, for potatoes were therein described as "light in yield and small in sample." The crop did best on the lighter soils, but was almost a failure on clay lands. In the south-western counties it was reported as below the average in yield and small in size, but of fair quality, and little rot was complained of. The best reports regarding quality and general condition came from the Georgian Bay and West Midland counties, but even in these groups the the rot was prevalent. In fact, rot was complained of from all quarters, and as it is not always prevented by housing it was feared that the net yield might be still further diminished by the spring. The following table gives the acreage and yield for 1889 and 1890, and also the average for 1882-90:

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	14,640	1,156,746	79.0	13,295	836,971	63.0	16,098	1,700,152	105.6
Lake Huron	12,706	1,321,519	104.0	11,422	1,048,661	91.8	12,782	1,451,802	113.6
Georgian Bay	14,211	2,071,965	145.8	12,974	1,397,613	107.7	13,687	1,747,484	127.7
West Midland	27,821	3,255,232	117.0	23,228	1,958,035	84.3	26,746	3,119,141	116.6
Lake Ontario	33,670	3,251,595	96.6	30,545	2,928,942	95.9	31,656	3,486,483	110.1
St. Law. and Ottawa.	38,335	4,477,866	116.8	37,938	3,870,337	102.0	38,737	4,811,710	124.2
East Midland	12,711	1,442,281	113.5	13,225	1,781,113	134.7	12,310	1,511,123	122.8
Northern Districts	4,000	583,913	146.0	3,185	533,857	167.6	2,903	433,321	149.3
Totals	158,094	17,561,117	111.1	145,812	14,355,529	98.5	154,919	18,261,216	117.9

The area of potatoes is 12,282 acres greater than that of 1889, and the average yield per acre is 12.6 bushels more, which means an increase in the total yield of 3,205,588 bushels. The total yield of 1890, however, falls 700,099 bushels short of the average for 1882-90, in spite of the increased acreage, owing to the fact that the average yield of 111.1 bushels per acre is 6.8 bushels below the average for the nine years. Compared with 1889, the East Midland is the only group revealing a decrease in the acreage. The average yield of 146.0 bushels per acre in the Northern Districts is a tribute to the richness of the virgin soil in the new settlements, yet the return falls short by 3.3 bushels of the average yield per acre of that group for the years 1882-90. The Lake Ontario and St. Lawrence and Ottawa counties, as usual, have the largest acreages of potatoes, but the first-named group has an average yield per acre of only 96.6 bushels, which is not as bad, however, as that of the Lake Erie counties, where only 79.0 bushels per acre are returned. The yield in the Lake Huron counties is also below the average of the province for the year.

Mangel-wurzels. Although mangels suffered considerably by the hot weather immediately following heavy rains, the crop on the whole turned out to be a splendid one, being of good quality and much above the average yield. As the acreage had been considerably increased and the crop was well housed, the season of 1890 may be regarded as a most successful one for mangel-wurzels. The following is a comparative table of acreage and yield for 1889, 1890, and 1882-90 :

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	1,607	701,312	436	1,666	491,490	295	1,323	514,130	389
Lake Huron.....	3,370	1,562,735	464	2,638	945,326	358	2,394	1,036,984	433
Georgian Bay..... ..	1,229	497,619	405	770	321,398	417	1,007	419,287	416
West Midland.....	8,946	4,203,084	470	7,223	2,200,121	305	6,229	2,792,532	448
Lake Ontario.	6,027	2,756,943	457	5,594	2,036,926	364	5,181	2,270,311	438
St. Law. and Ottawa.	2,447	922,461	377	1,735	619,419	357	1,715	633,037	369
East Midland.....	2,276	933,584	410	1,513	590,423	390	1,237	490,516	397
Northern Districts...	51	16,780	329	72	18,375	255	81	21,148	261
Totals.....	25,953	11,594,518	447	21,211	7,223,478	341	19,167	8,177,945	427

The crop continues to grow in the good opinion of agriculturists, except in the Lake Erie counties and the Northern districts, where mangels are never extensively raised. Not only is there an increase in acreage, but the average yield per acre for the province is far ahead of that of the previous year and also of that of the term 1882-90. The average yield of the province for the nine years is this year exceeded in the Lake Erie, Lake Huron, West Midland and Lake Ontario groups.

Carrots. The yield of carrots was better than ordinary, and the remarks concerning mangel-wurzels might be repeated as applying to this crop also. Carrots are

evidently coming into favor again. The following table gives the acreage and yield by county groups :

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	982	299,056	305	882	204,078	231	717	200,722	280
Lake Huron.....	1,048	371,141	354	1,047	286,000	273	1,003	351,411	350
Georgian Bay.....	1,145	417,300	364	1,015	347,028	342	1,129	410,633	364
West Midland.....	2,563	959,592	374	2,355	664,267	282	2,272	832,850	367
Lake Ontario.....	2,918	1,097,486	376	3,157	1,055,037	334	2,860	1,067,375	373
St. Law. and Ottawa.	2,141	678,081	317	1,723	496,109	288	1,546	473,030	306
East Midland.....	989	346,111	350	935	331,296	354	822	271,424	330
Northern Districts...	191	41,775	219	147	48,144	328	137	34,716	253
Totals.....	11,977	4,210,542	352	11,261	3,431,959	305	10,486	3,642,161	347

An extension of 716 acres in the area and an increase of 47 bushels in the average yield per acre have resulted in making the total yield of carrots 778,583 bushels more than that of the previous year, while it is 568,381 bushels more than the average for the nine years. The Lake Ontario group is the only district which does not show an increase in the area of the crop compared with the previous year. The poorest yields are observed in the Northern Districts and the Lake Erie counties, and the St. Lawrence and Ottawa and East Midland groups also fall below the average of the province for the year, but the royal yields of the four other groups, more especially those of the Lake Ontario and West Midland counties, raise the average for the year 5 bushels above the standard of the nine years 1882-90.

TURNIPS. Turnips suffered from the causes already described as affecting the other field roots, and in addition were attacked by the fly. But in spite of the fears expressed by correspondents in August, the crop gave relatively the best yield of any in its class. The November bulletin described turnips as small in some localities, although late rains had improved the crop generally. Favorable weather for pitting was anticipated. The acreage and yield for 1889 and 1890, together with the averages for 1882-90, are given in the following table :

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie.....	2,579	859,137	333	2,896	779,100	269	2,181	749,789	344
Lake Huron.....	12,636	5,531,452	438	12,948	3,978,598	307	12,551	4,825,564	384
Georgian Bay.....	13,345	5,678,382	426	13,038	4,536,222	348	12,322	4,887,500	397
West Midland.....	36,316	14,975,082	412	35,065	10,440,234	298	34,696	13,905,782	401
Lake Ontario.....	32,509	15,085,001	464	33,037	12,202,146	369	29,129	11,796,512	405
St. Law. and Ottawa.	5,360	1,967,738	367	4,479	1,601,906	358	4,002	1,337,625	334
East Midland.....	6,145	2,194,655	357	7,339	2,662,901	363	5,638	1,948,568	346
Northern Districts...	2,165	749,116	346	2,301	820,153	356	2,076	655,255	316
Totals.....	111,055	47,040,563	424	111,103	37,021,260	333	102,595	40,106,595	391

This is the only root crop which has shrunk in area, the number of acres being 48 less than in 1889, although the Georgian Bay, West Midland and St. Lawrence and Ottawa groups each show an increase as compared with their respective acreages in the previous year. The average yield per acre for the province, however, is 91 bushels more than that of 1889, and 33 more than that of 1882-90, and the consequence is an increase in the total yield of 10,019,303 bushels compared with the crop of 1889, and 6,933,968 bushels compared with the average for the nine years. The splendid average yield of 464 bushels per acre is recorded for the Lake Ontario counties, and three other groups also go over the average for the nine years. The average yield of the Lake Erie counties, the lowest for the year, is identical with the average of the province in 1889, which was a very poor year for turnips, and this group is the only one which does not surpass its own average for the nine years.

HAY AND CLOVER.

The condition of clover in the spring was not very satisfactory, being very similar to that of fall wheat. The seed appears to have made a very good catch, but the light snowfall during the winter afforded but little protection to the roots, and much damage was also caused by alternate freezing and thawing, especially on low meadows and where the land was low and poorly drained. Some correspondents in May said that it looked as if the roots might yet be raked into heaps and the land replowed for other crops. But on high and sandy soils the new clover presented a more encouraging appearance, and promised a good crop should conditions continue favorable. The most serious damage from all causes occurred in the south-western counties, more especially in Essex and Kent. In the central, northern and eastern portions of the province the reports were more cheerful in tone. With the exception of the counties of Dundas and Stormont and a few other localities along the St. Lawrence, every county reporting in August gave unanimous expression to the opinion that the hay crop was a magnificent one. Many correspondents reported that so big a crop had never been known in their respective neighborhoods. In the western and central counties hay was saved in splendid condition, but "catchy" weather was reported in various sections further east. Taken altogether, however, the crop was not only a large one, but its general quality was first-class. In different parts of the province there was no room in the barns for the cut, and an unusual number of hay stacks were to be seen. Cutting was rather later than usual. The midge was reported in several counties, and was spoken of as likely to thin the yield of clover seed. The acreage and yield in 1889 and 1890, together with the average for 1882-90, are given in the following table:

Districts.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.
Lake Erie.	286,576	525,644	1.83	296,596	508,450	1.71	274,032	403,023	1.47
Lake Huron.....	270,648	484,865	1.79	257,147	399,795	1.55	233,194	330,261	1.42
Georgian Bay.....	209,795	375,602	1.79	211,275	309,338	1.46	191,497	251,471	1.31
West Midland.....	433,638	897,491	2.07	419,362	681,957	1.63	408,271	632,981	1.55
Lake Ontario.....	417,641	760,974	1.82	404,637	649,232	1.60	406,197	576,737	1.42
St. Law. and Ottawa.	618,434	895,976	1.45	595,669	918,604	1.54	554,200	747,169	1.35
East Midland.....	168,581	267,568	1.59	157,131	206,714	1.32	153,088	188,288	1.23
Northern Districts...	56,689	97,795	1 73	44,406	54,223	1.22	41,185	51,684	1.25
Totals.....	2,462,002	4,305,915	1.75	2,386,223	3,728.313	1.56	2,261,664	3,181,614	1.40

The total yield of 4,305,915 tons, which is 577,602 tons more than that of the previous year, and 1,124,301 tons more than the average for the nine years 1882-90, is due to the increase both in area and yield. The acreage of 1889 is enlarged by 75,779, and the average yield per acre of that year is exceeded by .19 ton. A decrease in acreage compared with the previous year is observed in the Lake Erie and Georgian Bay counties, but the splendid yields in each of these groups lift their total returns considerably above their respective records in 1889. None of the county groups fall as low as the average of the province for the nine years, and but one, the St. Lawrence and Ottawa, goes below the average of the province for 1889. The West Midland counties show the magnificent average yield per acre of 2.07 tons.

Clover Seed. The raising of clover for seed has been but little practised in this province of late years, owing to repeated failures of the crop. This year will not likely give great encouragement to farmers, for while a few fields were reported as good, the majority of correspondents represented the crop as not worth the threshing. The most favorable reports came from Prince Edward and some of the river counties. The midge, as usual, pursued its destructive work in nearly every district, but much injury was also done by drouth immediately after harvest. Frost did not seriously affect the crop.

COMPARATIVE YIELDS OF FIELD CROPS.

Aggregate Yield of Field Crops. The aggregate yield of a crop must of course depend upon two things, viz., the acreage and average yield, and each of these factors is dealt with elsewhere. In the following table the net results of acreage and yield are shown by county groups and for the province for a series of years. The column for 1885-90 is inserted to correspond with the table of values, some of the items in which were computed only from 1885 :

Field Crops.	1890.	1889.	1888.	1887.	1886.	1885-90.	1882-90.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Fall wheat	14,267,383	13,001,865	13,830,787	14,440,611	18,071,142	15,848,345	17,635,540
Spring wheat....	7,683,905	5,697,707	6,453,559	5,633,117	9,518,553	7,352,787	8,679,827
Barley.....	15,600,169	23,386,388	23,366,569	17,134,830	19,512,278	19,255,637	19,705,734
Oats.....	52,768,207	64,346,301	65,466,911	49,848,101	58,665,608	57,720,812	56,566,276
Rye.....	1,563,345	1,431,679	1,295,302	894,887	1,106,462	1,260,530	1,744,164
Pease	15,389,313	13,509,237	14,269,863	12,173,332	16,043,734	14,231,945	13,418,124
Corn	14,011,181	9,248,199	17,436,780	8,404,752	10,805,309	11,774,602	12,125,521
Buckwheat	2,053,720	1,272,578	1,222,283	1,025,353	1,678,708	1,463,886	1,441,358
Beans	761,341	371,893	534,526	275,975	482,072	487,062	490,541
Potatoes.....	17,561,117	14,355,529	22,273,607	10,678,000	16,012,358	16,995,293	18,261,216
Mangel-wurzels..	11,594,518	7,223,478	10,020,659	5,695,761	8,787,743	8,497,148	8,177,945
Carrots.....	4,210,543	3,431,959	3,898,584	2,105,686	3,478,751	3,431,307	3,642,161
Turnips	47,040,563	37,021,260	47,640,237	31,413,456	47,061,053	41,885,717	40,106,595
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Hay and clover..	4,304,915	3,728,313	2,009,017	3,093,610	2,994,446	3,230,409	3,181,614

Fall wheat, spring wheat, rye and potatoes have each a considerably larger yield than in the previous year, but both fall greatly behind their averages for the nine years 1882-90. Barley and oats are less than in 1889, as well as below their averages for the nine years. All the other crops exceed their aggregates both for the previous year and

for the nine years period. The increases in the total yields of buckwheat, mangel-wurzels and hay and clover are relatively the largest compared with their averages for the nine years. Barley, fall and spring wheats have had the greatest proportional decline compared with 1882-90.

RATIOS OF AGGREGATE YIELD. The table following presents the per cent. ratios of aggregate production of the several crops in 1890 by county groups and for the province as compared with the nine years 1882-90 :

Districts.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Lake Erie.....	89	171	101	75	109	111	103	125	183	130	68	136	149	115
Lake Huron.....	80	94	98	104	189	126	133	182	96	147	91	151	106	115
Georgian Bay.....	74	86	82	106	118	112	223	217	190	149	119	119	102	116
West Midland.....	85	102	100	99	112	114	118	132	77	142	104	151	115	108
Lake Ontario.....	72	88	69	90	80	118	115	162	102	132	93	121	103	128
St. Lawrence and Ottawa	54	75	68	86	78	95	164	127	99	120	93	146	143	147
East Midland.....	76	88	61	95	101	126	138	177	153	142	95	190	128	113
Northern Districts.....	154	69	112	125	93	144	113	186	151	189	135	79	120	114
The Province.....	81	89	79	93	90	115	116	142	155	135	96	142	116	117

Out of the fourteen items comprising the table, eight go over the 100 in the figures for the province, viz., beans, buckwheat, mangel-wurzels, hay and clover, turnips, carrots, corn and pease. The standard is exceeded in every district in the case of corn, buckwheat, hay and clover, carrots and turnips. The Northern Districts have the highest per cent. ratio in fall wheat, barley, oats, pease, hay and clover and potatoes, the Georgian Bay group in corn (with the surprising record of 223), buckwheat and beans, the Lake Erie counties in spring wheat and carrots, the Lake Huron group in rye, the St. Lawrence and Ottawa in turnips, and the East Midland in mangel-wurzels. Fall wheat shows a ratio of only 81 per cent. for the province, but the figures for that crop in the St. Lawrence group dip to 54 compared with their average for the nine years.

RATIOS OF YIELD PER ACRE. The per cent. ratios of the average yield per acre of the leading field crops compared with the average yield of the nine years 1882-90, are given by county groups and for the province in the following table, each group being compared with its own average:

Districts.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Lake Erie.....	102	90	83	67	93	81	97	104	99	124	75	112	109	97
Lake Huron.	108	112	91	84	106	97	96	85	76	126	92	107	101	114
Georgian Bay.....	90	91	96	92	85	101	102	106	107	137	114	97	100	107
West Midland.....	112	112	95	83	101	90	96	102	90	134	100	105	102	103
Lake Ontario.....	94	75	79	79	93	98	96	101	84	128	88	104	101	115
St. Lawrence and Ottawa	90	70	82	80	90	104	109	104	86	107	94	102	104	110
East Midland.....	89	85	84	90	100	115	101	104	113	129	92	103	106	103
Northern Districts.....	94	82	91	87	96	96	94	95	100	138	98	126	87	109
The Province.....	102	84	86	81	94	97	97	102	96	125	94	105	101	108

Hay and clover makes an excellent showing for the province, the figures reaching 125. The ratios of turnips, mangel-wurzels, fall wheat, buckwheat and carrots also exceed 100 in the order named. Fall wheat has its highest showing in the West Midland group and its lowest in the East Midland. The ratio of spring wheat reaches 112 in the Lake Huron and West Midland groups, but drops to 70 in the St. Lawrence and Ottawa counties. Barley and oats fail to reach 100 in any district. Rye, pease, corn and beans each have three figures in three groups, while buckwheat fails to reach the standard in two districts only. Hay and clover does not go below 107 in any group, and mounts as high as 137 and 138. Potatoes reach 114 in the Georgian Bay counties and match the standard in the West Midland group, but show only a pair of figures in the other districts. The Georgian Bay group with 97, is the only district falling below 100 for mangel-wurzels, but carrots and turnips show three figures in every group.

AVERAGE YIELDS PER ACRE. The yields per acre are shown in the following table by county groups and for the province for the years 1889 and 1890, with the averages for the six and nine years 1885-90 and 1882-90:

Field crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.			
									1890.	1889.	1885-90.	1882-90.
	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.
Fall Wheat....	18.8	20.9	18.1	22.0	18.8	16.1	17.4	17.9	19.8	15.8	18.9	19.4
Spring Wheat.	13.2	15.5	13.2	16.6	11.9	11.2	12.2	14.6	12.8	14.3	13.7	15.2
Barley	20.5	24.3	24.1	26.8	20.5	19.7	19.9	21.2	22.2	26.7	25.3	25.8
Oats.....	23.8	29.1	30.0	31.0	28.2	25.6	27.9	26.8	28.0	33.5	33.0	34.4
Rye.....	14.4	18.8	15.2	16.6	13.7	16.1	15.6	18.5	15.2	15.9	15.4	16.2
Pease.....	15.0	21.2	21.7	19.2	19.5	20.1	21.8	22.1	19.7	19.1	20.0	20.3
Corn	67.0	58.4	54.4	62.3	56.2	62.3	51.5	37.8	62.6	49.4	63.0	64.5
Buckwheat....	21.1	15.8	18.5	20.0	22.2	24.7	23.3	23.9	22.8	22.6	21.9	22.3
Beans	19.3	15.5	19.6	18.6	17.7	20.5	21.8	20.9	19.3	17.0	19.5	20.2
Potatoes.....	79.0	104.0	145.8	117.0	96.6	116.8	113.5	146.0	111.1	98.5	113.6	117.9
Mangel-wurzels	436	464	405	470	457	377	410	329	447	341	421	427
Carrots.....	305	354	364	374	376	317	350	219	352	305	331	347
Turnips	333	438	426	412	464	367	357	346	424	333	392	391
	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.	Ton.
Hay and Clover	1.83	1.79	1.79	2.07	1.82	1.45	1.59	1.73	1.75	1.56	1.39	1.40

Spring wheat, barley, oats and rye are the only crops which do not show an increase compared with their respective yields per acre in the previous year, while fall wheat, buckwheat, hay and clover, mangels, carrots and turnips are the only crops exceeding their own average yields for the nine years. The highest yield per acre is found in the following districts: Lake Erie, corn; Lake Huron, rye and mangel-wurzels; West Midland, fall wheat, spring wheat, barley, oats, and hay and clover; Lake Ontario, carrots; St. Lawrence and Ottawa, buckwheat and turnips; East Midland, beans; Northern Districts, pease and potatoes.

FRUIT AND FRUIT TREES.

The majority of correspondents, more especially those in the eastern part of the province, reported vegetation rather backward as April closed. The reports concerning orchards were on the whole favorable. On the 1st of May the peach was in blossom along Lake Erie and the Niagara river, and the damage to this tender tree during the winter was said to have been very slight. While not so far advanced in bud, apples promised well, more especially in the Lake Huron and West Midland counties, where it was "an off year" in 1889. Plums and cherries suffered from black-knot, the latter to such a degree that the extinction of the fruit in Ontario at an early day is threatened unless decisive measures are taken to deal with the disease. A heavy wind storm uprooted orchard trees in various counties, but the damage was not at all general. Grapes and small fruits generally were considered as promising, although in two or three western counties strawberries were injured by lying too long under water. It was also remarked that mice or other field vermin had done no perceptible injury.

The August bulletin had the following paragraph: "The splendid promise at the period of blossoming has not been fulfilled. Much of the fruit did not set, and apples, pears, plums and other fruits have been falling in an immature condition to an alarming extent. Apples will be less than one-third of a crop, and the quality so far as appearance is concerned will not be of the best. It is also a poor year for pears. Plums are a comparative failure, except in Grey and one or two other localities; the black-knot and the curculio are doing deadly work. Cherries are reported as giving a big yield in several sections, but the black-knot has also claimed this fruit for its own, and in many places the trees are rapidly disappearing from the orchards. There will be a few early peaches for the market, but the later and better varieties will be very scarce. Strawberries were not so abundant as was expected, but small fruits generally were about an average. Grapes give promise of a glorious yield in the Lake Erie region, where this fruit is now being largely grown."

The following summary of the condition of the orchard during the season, appeared in the November bulletin: "In scarcely any section of the province can it be said that the apple crop has been an abundant one. The trees blossomed with great promise in the spring, but a blight, apparently caused by the cold, wet weather, sadly diminished the chances for a heavy crop of fruit. In the extreme south-west the leaves of apple and pear trees assumed a rusty reddish color, and the newly formed fruit dropped in considerable quantities; and in many other localities the fruit dropped while yet immature. In the counties of Essex, Kent, Elgin, Lambton and Middlesex, the apple crop was nearly an entire failure, and of other fruits there has been not more than a sufficiency to supply local demands. In most of the West Midland counties there has been a small surplus of winter apples, and there as well as in the Niagara peninsular pears, plums, cherries and grapes and other small fruits have been moderately plentiful, but grapes are the only fruit of which any considerable shipments have been made. All variety of peaches were scarce, although occasionally an extra sample has been produced. Apples were a good crop in the counties of Grey, Bruce and Huron, and also moderately good in Simcoe. From the first three of these counties large quantities have been shipped at good prices. From the township of St. Vincent (Grey) it is stated that fifteen thousand barrels have been shipped. Pears were moderately plentiful also, and have generally turned out better than apples. Throughout the eastern counties there has been a small surplus of apples, and other fruits have been about adequate to the demand. Winter apples vary greatly in size, shape and quality. The fall varieties are generally uneven in shape and of scabby appearance, but the supply has been moderate. The general appearance of fruit trees is satisfactory, very fair growth having been made. Black-knot on plum and cherry trees appears to be gradually increasing, and in some districts trees have been almost exterminated by it. Every possible precaution ought to be taken to prevent its encroachment on districts at present unaffected."

Area in Orchard and Garden. The following table shows the area in orchard and garden by county groups and for the province for each of the years 1882-90, together with the average for the nine years, and the rate per 1,000 acres cleared in 1890 :

Year.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890.....	39,517	21,600	11,858	37,338	52,438	11,098	8,330	617	182,796
1889.....	39,699	21,105	11,729	37,256	52,242	12,079	8,130	526	182,766
1888	38,015	20,342	11,620	36,524	53,881	11,733	7,839	603	180,557
1887.....	37,067	19,874	11,129	37,402	54,080	12,401	8,911	578	181,442
1886.....	39,028	19,946	11,097	38,304	56,622	12,375	8,635	609	186,616
1885.....	39,844	19,925	11,555	40,593	56,796	13,145	8,838	570	191,266
1884.....	39,952	19,952	11,577	41,628	55,112	14,320	9,780	516	192,837
1883.....	40,084	19,907	12,228	42,800	57,358	14,760	9,950	363	197,450
1882.....	42,700	21,478	14,347	44,987	58,559	19,028	12,285	462	213,846
1882-90.....	39,545	20,459	11,904	39,648	55,232	13,438	9,189	538	189,953
Rate per 1,000 acres cleared, 1890..... ...	28.3	16.3	11.4	16.3	22.8	4.8	9.9	4.0	15.7

The total area of farm property in orchard and garden is 182,796 acres, being 30 acres more than was reported in 1889. The ratio per 1,000 acres cleared is 15.7 for the province, ranging from 9.9 in the Northern Districts, and 11.4 in the Georgian Bay group to 28.3 in the Lake Erie counties.

FALL PLOWING.

When correspondents wrote (on or before the 10th of November) fall plowing was hardly so well advanced as might be desired. The complaint was very general that the land was too wet, and with many farmers the somewhat late harvest rushed fall work considerably. In Essex, Kent and Elgin but little plowing had been attempted, owing principally to corn husking, and in Lambton the excessive wet weather hindered operations. In the West Midland and Georgian Bay counties the work was fairly well advanced, notably in Simcoe and Middlesex, where it was reported that many farmers were about through. In the eastern counties the land for the most part was in good condition and the weather fine and open, so that notwithstanding the lateness of the harvest the farmers were enabled to plow fully as large an area as usual, and the work was everywhere nearly completed.

UNDERDRAINAGE.

In the Georgian Bay counties very little was done this year in the way of underdrainage, but in the other western groups of counties average progress was made, and more than the average in the county of Perth, where one correspondent described the activity in drainage as "a craze." With the exception of the county of York, little progress was made in the eastern groups apart from an odd farm here and there. In the

Lake Huron counties lumber is still largely used in the construction of drains on account of its cheapness, but in the Lake Erie and in some of the West Midland counties tile is preferred, and there was an abundant supply. Only two or three correspondents stated that the tile draining machines are in use, but more frequent mention was made of their abandonment.

THRESHING AND MARKETING.

The November bulletin had the following remarks under the above heading: "With the exception of some of the counties along the St. Lawrence, threshing appears to be well advanced; many correspondents report the work as completed. As might be expected, most of the barley of good color was hurriedly marketed in order to head off the operations of the McKinley Bill. Pease have been more freely sold than wheat or oats, and there appears to be a disposition among those who can afford it to hold back the last named grains for a rise, although frequent mention is made of the fact that early marketing of wheat was made owing to hard times. Several correspondents state that the reason more grain has not been marketed is that there is very little above home requirements to dispose of." Many references were made by correspondents to the direct effects of the McKinley tariff upon the barley trade of this province, from which the following qnotations are taken:

Harwich, Kent: The barley is all marketed. The principal part of it went to the United States.

Walpole, Haldimand: Barley is nearly all marketed. It was rushed out to get ahead of the McKinley Bill.

Stephen, Huron: The prospect of the McKinley Bill induced many farmers to sell their surplus barley before the 6th of October.

Gwillimbury W., Simcoe: Marketing has been slow in progress except in the case of barley which was hurried to market before the McKinley tariff came into operation.

McGillivray, Middlesex: Most of the barley has been marketed. It was hurried out before the McKinley Bill came into force.

Zorra E., Oxford: Threshing is nearly all through. Wheat has been withheld while barley has been shipped so as to be ahead of the "new duty."

Minto, Wellington: Barley was generally hurried to market in view of the McKinley Bill going into operation.

Waterloo, Waterloo: This year's crop is principally all threshed, and the McKinley Bill has rushed the barley to market.

Beverly, Wentworth: A great deal of threshing has been done, but not much was marketed except barley, which was rushed to market before the McKinley Bill came into operation.

Esquesing, Halton: Not much wheat has been marketed as yet, but the McKinley Bill sent most of the barley to market in a hurry.

Markham, York: Nearly all the six-rowed barley was marketed before the McKinley Bill came into effect.

Reach, Ontario: Barley was rushed out fast before the U. S. tariff went into effect, but it has nearly stood still since.

Haldimand, Northumberland: Barley was crowded into market before the McKinley Bill took effect.

Ameliasburg, Prince Edward: The McKinley tariff in the United States created quite an early rush in the marketing of barley.

Adolphustown, Lennox and Addington: About one-half of the barley crop was sold before the McKinley tariff came into operation.

Richmond, Lennox and Addington: Barley was rushed into market before the 6th ult. to head off the McKinley tariff.

GENERAL REMARKS.

The following are selected from the general remarks of correspondents:

FROM THE MAY REPORT.

Colchester N., Essex: In winter when there is snow we can find profitable employment in getting out logs for lumber and staves, and during the summer in assisting to manufacture the same; but this season we have not had a day of sleighing or a day that the bush was frozen hard enough for this class of work to be done with any advantage.

Camden, Kent: A great many in this locality are turning their attention to fruit raising, numbers of new orchards having been recently started.

Yarmouth, Elgin: A large quantity of maple syrup and sugar was made this spring.

Usborne, Huron: I think farmers make a mistake in allowing stock to run over and eat off the young clover in the fall, as the fall growth would protect the root during the winter. I know of some fields on which the stock were not allowed to run that are not much injured by the winter,

Dorchester N., Middlesex: In this locality sending milk to the cheese factory is the principal occupation of farmers, cheese and hogs being our staple farm products. This business is improving slowly in the way of farmers raising their own cows instead of going into non-dairying districts and buying what often turn out to be "scrubs."

Fullarton, Perth: Farmers should be more careful in selecting clean seed grain and grass seed in order to prevent the introduction of noxious weeds. It would also be well if they would be careful when they notice fresh kinds of weeds to check them in time before they get spread about to such an extent that it is almost impossible to subdue them.

Richmond, Lennox and Addington: The building of the double line on the G. T. R. and the laying of water pipes in Napanee tended to increase wages considerably in this locality. The completion of the latter work, however, has thrown a number of men out of employment and wages have again fallen.

Oso, Frontenac: This county is more for mining than farming. There are some well paying phosphate mines here.

Elizabethtown, Leeds and Grenville: I am very glad that a law is coming into force to protect bees from the ravages of foul brood.

FROM THE AUGUST REPORT.

Mersea, Essex: In this section there is a good amount of sorghum grown and the syrup is made up for home use.

Raleigh, Kent: Quinces should find a place among your list of fruits. About 200 barrels are grown here annually for export. Pears are also receiving more attention.

Bayham, Elgin: I would suggest that we summer fallow more and more thoroughly in order to kill thistles and foul weeds, because it is plain to be seen that they are on the increase yearly throughout Ontario.

Southwold, Elgin: Dr. Barnardo and others engaged in bringing good boys and girls to assist on the farms of Ontario are doing a good work, and those who would attempt to deter them from their purpose are doing an injury to the unfortunate children as well as injustice to Canada.

Middleton, Norfolk: Much of the land surrounding Delhi is planted to corn, beans, pease, tomatoes, etc., in order to supply the Delhi canning factory.

Bosanquet, Lambton: Flax is a crop that is raised here, and a flax-mill is kept in operation.

Plympton, Lambton: If something is not done to prevent the spread of Canada thistles in this section in a few more years some farms will have nothing but thistles for a crop.

Sydenham, Grey: Canada thistles are not half so plentiful this year as last. Wild mustard seems to be on the increase, but there is a general tendency to clear the land from noxious weeds, and consequently stock is kept in better condition.

Innisfil, Simcoe: A big thunderstorm occurred on the 25th of July. Pieces of hail of enormous size fell, smashed most of the western windows in its track and destroyed much grain.

Dorchester N., Middlesex: The growth of thistles, rag-weed, ox-eye daisies, etc., is increasing, as the law appears to be a dead letter. Neighbors do not like to inform on neighbors, and the "inspection" is simply a humbug. At present there is across from my farm a field with enough thistles to seed the country.

Nissouri W., Middlesex: A severe wind and hail storm visited this township on the 25th day of July, covering a strip about a mile wide and destroying most of the crops in its course. There are hundreds of acres in which scarcely a peck of grain was left, and the straw was also much damaged.

Zorra E., Oxford: Considerable flax is grown in this township and is a good paying crop. The land is prepared by the owner and leased for the crop. The seed is found and sown and the crop harvested by the owners of the flax-mills. This year's crop is a very good one and will bring a large sum of money into the locality.

Peel, Wellington: Flax is extensively grown here and promises a good yield.

Dumfries N., Waterloo: The only suggestion I would mention is one in regard to the destruction of noxious weeds, thistles, etc., which are rapidly over-running the country.

Waterloo, Waterloo: "Union is strength." If the farmers were to unite and form unions as all other classes do they could accomplish a great deal. In this county we have a farmers' union of 1,000 members, divided into local unions, each with a local president and secretary, working under a general manager. It is this manager's duty to make bargains on large orders for the union and deal direct with manufacturers. This saves middlemen's profits, which go direct to the farmers. Over $4,000 worth of twine was bought by the union and over one ton of Paris green.

Woolwich, Waterloo: The Government should take steps to do away with the English sparrows which are getting very numerous in some places. They destroy a lot of grain. I have seen fields of grain which were half threshed out by them for two or three rods along the fences before the grain was cut, and after it was put up in shocks it was worse still. I think I am safe in saying that they destroyed from eight to twelve bushels of wheat for me this season, and now that the wheat is housed they are starting on the oats.

Grimsby N., Lincoln: I have noticed a very handsome plot of tobacco growing.

Uxbridge, Ontario: Roots and small fruits, such as strawberries and raspberries, are grown to a considerable extent of late years in this locality and pay the farmer better than grain, and the land is kept up much better.

Hallowell, Prince Edward: No "Hulless oats" have been grown this year. Farmers are now satisfied that they should leave such speculations alone. Several farmers in this county, however, have been duped by the fanning mill swindlers.

Sophiasburg, Prince Edward: A number of farmers are raising tomatoes for canning purposes, and sweet corn for the canning factory is also considered a good paying crop.

FROM THE NOVEMBER REPORT.

Colchester S., Essex: Tobacco growing is receiving more attention than for years. Several farmers have tried from two to nine acres with very gratifying results, so much so that their crop will doubtless be doubled another year. One grower has reported to me that he has raised over 1,100 lb. to the acre. Fruit growing, more especially in small fruits, is also receiving considerable attention.

Pelee Island, Essex: As fine tobacco is grown here as is seen in Virginia or Tenessee, and also broom corn of a superior description. No better sorghum is raised in Canada, and by repeated plantings it can be grown so as to be fit for manufacturing into syrup from the 20th of August until the 10th of November.

Harwich, Kent: Some tobacco is raised in this locality and it appears to pay well. The average yield per acre is about 1,000 lb., and it will sell for about 10 cents per lb.

Yarmouth, Elgin: I believe that our farmers should increase the number of their sheep. I have observed that farms where sheep have not been kept are getting much more full of foul weeds than are those farms where a flock can be seen. Sheep also distribute the manure more evenly over the land.

Dunn, Haldimand: The most of the ashes here are bought up and shipped to the United States. I believe they should be kept and used upon the farms here.

Stanley, Huron: We grow tobacco here which appears to do very well. It grows from 3 to 3½ feet high, and many of the leaves are about 30 inches long and 13 inches wide. It is chiefly used by the growers themselves who are principally French Canadians.

McGillivray, Middlesex: Flax is grown in this neighborhood and appears to have been a good crop.

Peel, Wellington: Flax has been grown in this locality to a considerable extent. It has been only an average crop this year, and was marketed at about $10 a ton.

Caistor, Lincoln: The greatest drawback to the sheep industry are dogs and the negligence of farmers to castrate their lambs at the proper time.

Markham, York: I consider poultry the best paying stock on the farm, taking into consideration the amount invested. Farmers should also raise more sheep.

Mara, Ontario: Rape is sown somewhat extensively in this township, and is used for fattening sheep, lambs and cattle in the fall of the year. It is also an excellent green manure when plowed under in the summer season.

Hallowell, Prince Edward: Hops are grown here quite extensively, and more persons are likely to go into raising them next year. An enormous quantity of strawberries are grown annually and canned by the factories. Various kinds of produce are canned in factories, pumpkins being in great demand.

Hillier, Prince Edward: Fancy pease is one of the leading cash crops in this locality, and they were a fair crop this year. This industry is represented by three firms who furnish the seed to farmers on contract for a stated price per bushel.

Osgoode, Carleton: Tobacco is grown extensively by the French Canadian farmers in this locality, and is said to be very profitable. Grass seed is also raised to a large extent by the same farmers. Maple syrup is also produced and is more profitable than our orchards of apple trees. Good plowing is the rule here, and is encouraged by the annual plowing match where a gold medal is given by one of our leading farmers for the best plowing, and plows are also offered in prizes by the leading plowmakers of the Ottawa valley.

Glamorgan, Haliburton: Stock-raisers should always raise flax, and with me it gives a good return. I do not utilise the stalks, but merely raise enough linseed for my own needs.

STATISTICS OF

THE WEATHER AND THE CROPS.

THE WEATHER.

TABLE I. Showing for each month the highest, lowest, mean highest, mean lowest, and mean temperature at the principal stations in Ontario in 1890; also the annual mean for each station.

	Temperature.	Saugeen.	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.
		°	°	°	°	°	°	°	°	°	°
January.	Highest	55.2	57.5	58.9	57.2	60.0	53.9	50.1	49.0	47.5	43.8
	Lowest	7.1	6.5	4.9	4.0	10.0	6.4	−5.5	-11.8	-20.4	-27.0
	Mean highest	35.7	36.0	39.3	37.3	39.2	36.9	30.3	33.1	25.5	23.3
	Mean lowest	20.3	24.6	22.4	21.0	26.1	20.3	13.3	12.2	3.8	−1.4
	Monthly mean	27.53	30.27	31.82	30.40	32.99	29.69	22.57	18.66	15.96	9.21
February.	Highest	56.0	58.2	58.6	55.9	61.0	53.8	42.5	46.0	45.0	45.8
	Lowest	5.2	5.5	10.0	6.0	9.0	3.0	−4.5	-13.8	-12 0	-31.4
	Mean highest	35.2	34.9	36.5	35.8	37.8	35.6	30.4	31.4	25.4	24.2
	Mean lowest	19.1	22.6	21.5	19.6	22.3	19.6	12.4	11.6	6.9	0.2
	Monthly mean	25.83	28.72	29.91	28.32	29.61	27.80	21.27	21.00	18.30	10.03
March.	Highest	49.0	54.0	49.0	53.6	59.0	53.5	43.0	49.0	48.2	43.3
	Lowest	-16.3	−9.0	−8.0	-10.5	1.0	−2.7	-13.4	-21.2	−8.8	-32.4
	Mean highest	33.0	32.6	34.6	34.8	37.1	34.7	32.0	35.3	33.8	30.9
	Mean lowest	16.6	19.6	20.3	17.3	23.3	20.9	12.7	12.7	14.8	5.0
	Monthly mean	23.00	26.09	28.28	27.08	29.99	27.57	22.24	21.79	24.39	16.44
April.	Highest	71.2	75.4	72.9	74.6	78.0	68.4	72.2	69.0	64.9	71.7
	Lowest	19.1	9.1	19.9	17.9	23.0	23.5	13.1	14.0	13.0	8.2
	Mean highest	49.6	54.2	55.6	54.9	55.7	51.6	52.8	50.7	49.3	48.5
	Mean lowest	31.0	32.0	33.4	31.1	36.6	32.8	29.4	29.9	29.7	25.9
	Monthly mean	38.92	43.16	46.09	43.72	46.09	42.31	40.33	38.83	39.64	36.08
May.	Highest	76.0	77.9	76.1	78.0	80.0	77.0	80.5	93.0	76.8	79.0
	Lowest	26.3	26.9	31.5	26.5	30.0	28.1	26.0	24.0	25.0	19.1
	Mean highest	57.4	60.9	61.6	61.3	61.6	58.9	60.6	59.7	61.3	58.7
	Mean lowest	38.7	40.9	43.4	40.1	43.5	41.1	38.1	49.1	40.5	35.2
	Monthly mean	47.07	50.80	53.91	51.63	52.26	50.01	48.57	48.37	50.31	47.11
June.	Highest	88.0	84.9	87.3	87.5	92.0	86.6	90.8	92.0	90.5	94.0
	Lowest	40.3	34.5	36.0	36.2	42.0	42.1	36.3	35.0	38.8	31.0
	Mean highest	72.8	77.6	77.8	78.1	78.9	74.8	77.7	78.2	75.4	77.2
	Mean lowest	53.0	55.1	55.7	54.4	59.1	56.5	54.0	53.1	54.1	49.1
	Monthly mean	62.53	66.30	66.67	67.95	69.34	63.31	65.42	65.77	64.37	62.57
July.	Highest	86.5	91.9	93.0	91.0	93.0	85.3	87.0	90.1	90.9	90.0
	Lowest	46.2	40.0	41.3	42.0	46.0	47.2	42.4	42.0	45.5	41.0
	Mean highest	74.8	79.8	79.2	79.1	83.4	77.1	77.8	77.6	79.4	77.9
	Mean lowest	57.5	55.2	55.5	54.7	61.3	58.0	55.7	56.4	57.3	53.3
	Monthly mean	65.46	67.47	67.21	68.23	71.64	67.34	66.02	66.88	67.42	64.18
August.	Highest	86.0	95.0	92.5	93.0	96.0	89.4	91.9	89.0	93.0	94.0
	Lowest	36.6	37.5	37.0	38.0	45.0	46.0	39.0	38.0	39.0	38.0
	Mean highest	72.2	74.1	73.5	75.0	76.5	73.1	73.8	74.3	74.3	73.6
	Mean lowest	54.3	52.8	52.7	51.2	57.6	55.9	51.6	55.3	54.0	49.4
	Monthly mean	61.43	63.45	63.20	64.17	67.19	64.49	61.89	62.40	64.14	58.27
Septem'r.	Highest	89.5	86.9	86.0	85.3	88.0	79.0	88.0	85.0	84.8	85.0
	Lowest	27.1	31.0	29.1	27.5	32.0	35.1	28.0	27.0	30.5	28.0
	Mean highest	66.7	68.5	68.9	69.0	71.4	66 6	68.2	70.0	68.0	67.4
	Mean lowest	46.6	46.9	46.5	44.8	49.7	48.6	44.9	45.5	46.4	42.4
	Monthly mean	54.15	57.66	59.39	57.42	59.71	57.46	56.07	55.41	56.08	51.18
October.	Highest	71.2	73.9	73.0	71.6	72.0	69.9	72.9	74.0	74.3	75.0
	Lowest	29.6	29.9	30.3	28.5	32.0	29.0	24.5	25.0	25.00	19.0
	Mean highest	55.2	55.1	55.4	54.2	58.5	54.6	54.0	55.9	53.6	52.2
	Mean lowest	42.1	40.7	41.0	39.0	44.0	42.4	37.8	39.2	38.4	35.6
	Monthly mean	46.34	47.94	48.88	47.50	51.42	48.27	45.04	45.74	45.76	41.42
Novemb'r.	Highest	58.0	61.7	61.0	59.5	62.0	59.0	57.0	54.0	57.2	50.0
	Lowest	16.1	19.0	12.2	13.0	16.0	15.9	5.0	7.0	7.5	−2.0
	Mean highest	47.6	44.6	46.0	44.4	46.9	43.7	40.4	42.1	38.8	35.9
	Mean lowest	29.7	30.9	30.3	26.6	33.6	30.4	24.8	25.2	24.2	20.1
	Monthly mean	35.52	37.76	38.80	37.38	41.19	37.00	32.48	32.67	31.13	27.57
Decemb'r.	Highest	47.9	41.3	40.0	39.1	44.0	41.1	36.6	39.0	38.0	36.0
	Lowest	−6.0	−2.0	−4.0	−2.8	0.0	−1.2	−9.8	-14.0	-17.0	-26.0
	Mean highest	33.2	30.0	31.1	29.8	33.4	30.2	24.5	23.9	16.8	16.7
	Mean lowest	15.1	16.2	16.3	13.9	19.9	14.9	6.0	5.0	−1.6	−6.2
	Monthly mean	22.79	23.12	24.99	23.62	27.10	23.00	15.75	15.21	8.00	4.08
	Annual mean	42.55	45.23	46.60	45.62	48.21	45.02	41.47	41.06	40.46	35.68

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TABLE II. Showing for each month the annual average of the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario derived from the nine years 1882-90; also the average annual mean at each station for the same period.

Temperature.	Saugeen.	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.
	°	°	°	°	°	°	°	°	°	°
January. Highest	45.9	47.2	47.8	47.4	52.3	45.1	42.7	43.0	40.7	39.5
January. Lowest	-10.4	-11.0	−9.2	-15.2	−5.0	-10.1	-25.1	-28.7	-23.4	-36.8
January. Mean highest	26.8	25.5	27.4	27.2	.....	27.6	22.8	22.9	18.4	17.4
January. Mean lowest	11.1	12.7	12.4	9.0	.....	12.3	5.0	1.9	− 0.4	−7.7
January. Monthly mean	19.49	19.08	20.87	19.51	22.51	20.52	14.18	13.46	9.67	5.79
February. Highest	46.2	49.4	47.5	47.4	48.0	44.2	42.6	42.8	39.3	42.3
February. Lowest	−9.7	-16.4	-11.8	-12.2	−6.6	−8.7	-17.7	-23.7	-22.4	-34.2
February. Mean highest	27.4	27.2	28.8	29.2	. ....	29.0	25.7	25.4	20.8	21.0
February. Mean lowest	10.9	11.7	11.5	9.8	.....	12.8	5.0	3.7	0.9	−5.1
February. Monthly mean	19.18	19.44	20.87	20.77	22.22	21.43	15.88	15.32	11.67	8.54
March. Highest	49.4	55.1	52.9	53.2	55.1	50.0	46.7	46.6	43.6	46.5
March. Lowest	−6.8	−9.5	−6.8	−7.2	2.1	0.2	-13.3	-17.0	-12.1	-25.9
March. Mean highest	32.2	33.4	34.2	34.3	.....	33.6	31.4	31.8	29.7	30.4
March. Mean lowest	15.4	17.3	17.1	15.8	. ....	19.0	12.0	10.3	11.0	3.5
March. Monthly mean	23.27	24.61	26.37	25.95	28.41	26.44	21.93	21.28	20.66	17.76
April. Highest	73.7	78.9	77.2	76.9	78.9	69.1	74.3	69.8	72.8	72.9
April. Lowest	12.7	13.6	17.3	15.4	23.3	20.8	11.9	8.8	11.0	3.5
April. Mean highest	47.9	52.2	52.4	52.5	.....	49.1	49.9	48.1	48.2	48.0
April. Mean lowest	29.7	31.7	31.8	30.2	.....	32.1	28.6	27.2	28.6	23.9
April. Monthly mean	38.37	41.95	42.78	41.64	42.56	40.65	38.92	37.50	39.38	36.31
May. Highest	78.6	83.0	80.4	80.1	82.4	75.8	81.4	81.9	81.1	85.2
May. Lowest	27.4	27.6	30.6	28.8	36.3	31.2	27.1	26.2	29.6	23.4
May. Mean highest	59.8	65.5	64.8	63.7	.....	61.0	64.4	63.1	65.4	63.8
May. Mean lowest	39.9	42.3	43.8	41.4	.....	42.8	40.7	41.6	43.4	37.5
May. Monthly mean	49.31	54 04	54.78	53.51	53.41	51.94	52.31	51.72	55.25	50.85
June. Highest	83.9	87.3	85.6	87.3	89.3	83.9	88.6	87.8	87.7	88.9
June. Lowest	37.2	35.8	39.7	37.8	46.1	42.2	37.1	36.6	40.2	33.9
June. Mean highest	69.7	75.7	74.2	75.9	.....	72.4	75.6	74.3	75.6	74.4
June. Mean lowest	49.5	52.1	53.3	51.6	...	52.7	50.2	50.9	53.1	47.5
June. Monthly mean	59.40	63.88	64.46	64.44	64.95	62.39	62.80	62.46	65.40	60.76
July. Highest	86.0	91.0	89.4	89.3	94.0	88.4	90.9	88.3	89.9	90.4
July. Lowest	40.9	41.2	45.6	44.6	51.4	48.3	43.1	43.2	47.4	40.6
July. Mean highest	73.7	80.1	78.2	79.4	.....	77.2	79.5	77.8	78.7	77.4
July. Mean lowest	54.0	55.2	56.7	54.6	.....	57.5	53.6	55.1	57.2	52.2
July. Monthly mean	63.76	67.65	68.26	68.14	70.26	67.49	66.37	66.34	68.83	64.43
August. Highest	85.7	90.1	87.6	89.5	91.7	86.5	90.1	88.1	88.5	89.1
August. Lowest	39.6	38.3	40.0	41.4	47.7	45.7	38.1	40.0	42.0	37.6
August. Mean highest	72.5	76.6	75.0	76.9	.....	74.6	76.1	74.8	75.3	74.1
August. Mean lowest	53.3	52.8	53.7	52.3	.....	56.1	51.7	52.9	53.7	50 0
August. Monthly mean	62.49	64.70	64.99	64.69	67.83	65.27	63.22	63.16	65.32	60.95
Septem'r. Highest	84.1	87.0	84.3	86.3	88.7	81.1	85.9	83.4	82.9	83.8
Septem'r. Lowest	31.6	31.8	32.5	30.3	36.9	36.4	29.3	31.2	30.7	29.0
Septem'r. Mean highest	66.7	70.4	68.7	69.9	.....	67.4	68.9	68.2	67.2	66.7
Septem'r. Mean lowest	47.0	48.1	48.9	45.6	.....	49.1	44.4	45.4	46.0	42.2
Septem'r. Monthly mean	56.23	59.33	58.72	58.25	60.44	58.30	55.94	56.05	56.90	53.05
October. Highest	72.2	76.0	72.7	74.0	73.3	69.7	73.2	71.1	67.7	70.9
October. Lowest	21.7	22.1	23.4	21.8	25.4	25.4	18.6	20.6	21.4	16.6
October. Mean highest	54.4	55.9	54.9	55.4	.....	53.9	53.7	53.9	51.2	51.1
October. Mean lowest	37.8	38.6	37.4	36.0	.....	38.7	34.5	36.1	34.2	32.0
October. Monthly mean	45.37	47.27	46.26	46.09	47.97	46.56	43.21	43.99	43.67	40.79
Novemb'r. Highest	61.5	63.9	62.1	62.5	65.0	59.7	61.0	60.5	58.3	56.5
Novemb'r. Lowest	11.4	13.9	13.9	10.1	17.7	13.3	3.1	6.2	4.2	−3.3
Novemb'r. Mean highest	42.9	43.1	44.0	42.9	.....	42.8	40.2	40.9	38.2	36.6
Novemb'r. Mean lowest	29.3	30.4	29.6	27.2	.....	30.1	25.2	24.7	24.7	21.4
Novemb'r. Monthly mean	35.56	36.75	37.15	35.96	39.01	36.70	32.38	33.04	31.98	29.11
Decemb'r. Highest	49.5	48.9	49.9	47.6	52.6	46.5	43.5	44.4	41.6	42.6
Decemb'r. Lowest	− 2.6	−3.4	− 4.1	−6.7	3.3	−1.7	-15.0	-13.2	-16.5	-25.4
Decemb'r. Mean highest	32.8	32.0	33.4	32.0	.....	33.0	28.3	29.0	23.9	24.1
Decemb'r. Mean lowest	19.8	19.9	19.4	17.1	. ...	20.1	12.4	12.9	7.6	3.6
Decemb'r. Monthly mean	26.38	25.97	27.18	25.77	29.77	27.08	21.02	21.90	16.52	14.07
Annual mean	41.57	43.72	44.39	43.73	45.78	43.73	40.68	40.52	40.44	36.8

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TABLE III. Monthly summary of bright sunshine at the principal stations in Ontario in 1890, showing the number of hours the sun was above the horizon, the hours of registered sunshine, the total for the year; also the average derived for the nine years 1882-90.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for the year.
	hrs.	hrs	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Hours of sun above horizon.	285.7	*291.4	369.9	406.4	461.6	465.7	470.9	484.5	376.3	340.2	286.9	274.3	4463.3
Wood-stock.. 1890...	45.1	56.4	126.6	199.0	182.6	253.5	289.8	240.5	197.2	71.2	97.7	70.6	1830.2
Wood-stock.. 1882-90	60.3	79.5	139.6	192.2	202.6	239.4	268.2	230.6	198.3	124.8	71.6	53.9	1861.0
Toronto . 1890...	59.9	52.8	144.4	229.3	184.7	265.7	304.3	249.5	209.4	86.8	106.8	84.0	1977.6
Toronto . 1882-90	76.6	92.0	150.6	196.4	220.5	263.3	289.6	253.7	212.4	134.7	80.9	50.6	2021.3
Barrie... 1890...	45.6	57.0	112.1	169.1	143.7	238.4	243.1	218.7	169.5	74.4	74.6	62.1	1608.3
Barrie... 1882-90	51.9	65.0	127.1	166.1	195.0	226.3	255.8	214.7	143.5	88.2	48.4	33.0	1615.0
Lindsay . 1890...	52.6	87.6	162.4	223.4	172.6	252.8	272.9	229.7	210.2	81.6	97.0	79.6	1922.4
Lindsay . 1882-90	75.6	95.9	159.3	205.5	218.4	257.3	280.9	236.1	205.2	126.8	76.2	54.9	1992.1
Kingston 1890...	49.5	91.0	165.2	229.0	189.0	263.3	292.0	234.8	189.4	111 4	92.4	93.4	2000.4
Kingston 1882-90	68.5	98.7	153.4	194.7	215.8	244.7	269.4	248.2	198.7	121.5	74.2	65.5	1953.3
Average for five stations. 1890...	50.5	69.0	142.1	210.0	174.5	254.7	280.4	234.6	195.2	85.1	93.7	77.9	1867.8
Average for five stations. 1889...	67.4	94.4	152.9	189.1	199.9	164.4	284.3	227.6	185.9	119.8	63.7	66.5	1815.9
Average for five stations. 1882-90	66.6	86.2	146.0	191.0	210.5	246.2	272.8	236.6	191.6	119.2	70.2	51.6	1888.5

* The average possible sunshine for February, 1882-90, was 293.9 hours.

TABLE IV. Monthly summary of inches of rain and snow precipitation in the several districts of Ontario in 1890; also the average derived for the nine years 1882-90.

Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for the year.
West and south-west:	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Rain.... 1890-..	3.44	1.82	1.05	2.52	4.30	4.48	2.06	2.91	1.71	5.15	2.92	0.31	32.67
Rain.... 1882-90	1.38	1.68	1.24	1.71	3.55	3.43	2.51	2.68	2.34	2.75	2.43	1.45	26.95
Snow..... 1890...	4.7	6.2	11.1	0.1	0.0	....	....	....	....	S	2.9	25.1	50.1
Snow..... 1882-90	16.8	11.2	10.7	3.6	0.1	.....	....	....	....	0.2	6.2	15.5	64.3
North-west and north:													
Rain..... 1890...	1.93	0.85	0.59	2.04	2.88	3.15	3.38	3.28	2.21	2.88	1.73	0.84	25.76
Rain..... 1882-90	1.11	0.73	0.85	1.39	2.64	2.90	2.48	2.58	2.97	2.85	2.04	1.20	23.74
Snow. ... 1890....	25.5	20.7	17.5	1.1	2.7	.....	....	....	....	0.7	6.5	25.7	100.4
Snow. ... 1882-90	29.8	22.4	14.4	4.2	0.6	.. ..	....	.. .	....	1.4	13.8	22.3	108.9
Centre:													
Rain..... 1890....	2.78	1.88	0.86	1.94	3.05	4.14	2.24	3.09	2.04	4.94	3.38	0.13	30.47
Rain..... 1882-90	1.34	1.34	1.09	1.58	2.73	3.16	2.30	2.32	2.42	2.44	2.30	1.37	24.39
Snow..... 1890 ...	8.9	9.1	10.8	0.1	0.0	.....	....	....	....	0.0	3.0	15.2	47.1
Snow..... 1882-90	18.4	11.7	10.0	3.4	0.1	.....	....	....	....	0.3	5.5	12.1	61.5
East and north-east:													
Rain..... 1890....	2.19	1.86	0.74	1.80	2.72	3.23	3.47	3.59	2.16	1.91	1.82	0.10	25.59
Rain..... 1882-90	1.06	0.85	0.85	1.40	2.51	2.88	2.89	2.63	2.57	2.09	1.96	1.04	22.73
Snow..... 1890...	12.6	15.4	13.1	0.4	S	.....	.. .	....	....	0.0	4.9	14.2	60.6
Snow..... 1882-90	22.4	18.8	14.2	5.2	0.3	.....	....	....	....	0.5	9.1	14.7	85.2

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TABLE V. Summary of the total fall of rain and snow, and of the number of days on which rain or snow fell in Ontario during the years 1889 and 1890 at stations reporting for the whole year, and the average for the province.

Stations.	Observers.	Rain.				Snow.			
		1890.		1889.		1890.		1889.	
		Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.
ESSEX:									
Cottam	W. E. Wagstaff	33.36	114	28.98	73	33.7	25	12.9	9
Pelee Island	J. Quick	35.47	59	26.91	60	35.0	7	36.0	8
KENT									
Blenheim	W. R. Fellows	37.08	100	33.15	72	39.3	17	33.0	21
Chatham	W. D. A. Ross	38.14	108	25.79	73	29.1	22	30.2	29
Dealtown	S. J. Pardo	38.44	109	31.11	102	21.8	22	17.8	24
Ridgetown	T. Scane	36.47	132	27.41	115	48.7	35	15.5	30
ELGIN:									
Cowall	S. Maccoll	31.55	95	23.06	86	32.0	27	51.0	18
Lyons	Wm. McCredie	35.06	91	25.11	87	42.1	20	50.3	24
Port Stanley	M. Payne	33.74	164	30 38	142	64.1	67	64.7	65
NORFOLK:									
Port Dover	H. Morgan	34.31	160	22.43	122	34.7	48	41.8	46
WELLAND:									
Niagara Falls S.	E. Morden	35.75	110	31.23	93	35 7	28	46.0	24
LAMBTON:									
Birnam	J. S. Mellor	32.72	105	29.98	91	63.4	34	73.3	30
Oil Springs	A. Smyth	25.07	75	20.57	49	31.5	21	49.0	27
Sarnia	Wm. Mowbray	29.53	70	20.45	58	33.5	12	37.5	16
Thedford	Martin Wattson	35.63	104	26.46	101	48.5	34	63.5	25
Watford	D. Ross	29.39	75	26.97	68	.....	.....	.....	...
Wyoming	J. Osborne	30.77	96	21.05	82	12.5	8	43.8	31
HURON:									
Goderich, L. H.	R. Campbell	24.01	84	22.78	74	83.5	38	90.5	32
Sunshine	G. Hood	27.34	99	28.82	91	60.7	44	98.1	40
Zurich	G. Hess	36.76	101	29.21	89	71.2	33	96.3	37
BRUCE:									
Lucknow	M. Macdonald	28.93	129	30.09	120	85.8	70	111.6	67
North Bruce	J. B. Muir	25.50	120	24.57	98	62.4	53	50.5	38
Point Clark	J. Ray	24.56	52	21.76	42	54.0	26	99.0	18
Saugeen	Mrs. J. R. Stuart	25.43	140	23.99	109	100.8	84	111.2	71
GREY:									
Bognor	C. H. Heming	27.37	124	21.86	62	111.8	56	88.5	24
Durham	J. Gunn, M.D.	26.48	113	22.22	96	144.0	80	26.0	52
Owen Sound	John McLean	28.95	79	24.50	62	103.0	38	110.9	36
Presque Isle	J. McKenzie	31.20	93	27.99	90	82.9	43	115.8	49
SIMCOE:									
Coldwater	J. B. Lazonby	26.44	97	23.58	76	103.9	52	122.6	56
Orillia	H. A. Fitton	23.16	104	20.98	105	96.0	68	129.0	68
MIDDLESEX:									
Coldstream	Daniel Zavitz	31.98	96	26.85	87	50.5	27	79.0	30
London	E. B. Reid & J. S. Dewar	30.94	109	24.43	107	71.0	52	123.0	36
Wilton Grove	H. Anderson	30.75	91	25.18	68	48.8	19	50.0	17
OXFORD:									
Princeton	D. Beamer	27.28	105	22.71	91	39.5	23	67.2	40
Woodstock	Prof. Wolverton	33.53	111	22.97	100	74.6	41	93.9	40
BRANT:									
Paris	John Kay	33 47	115	27.76	107	25.5	19	49.3	22
St. George	Dr. Kitchen	33.63	121	25.98	105	44.8	36	62.1	40
PERTH:									
St. Mary's	J. Thomson	34.90	97	28.85	88	57.5	24	77.0	35
WELLINGTON:									
Elora	T. Connor	33.97	78	28.62	69	39.2	33	54.0	29
Fergus	A. D. Ferrier	31.56	105	24.20	112	54.1	48	98 4	53
Guelph, O.A.C.	C. A. Zavitz	16.49	60	23.15	85	17.9	33	83.9	38

TABLE V. THE WEATHER.—*Continued.*

Stations.	Observers.	Rain.				Snow.			
		1890.		1889.		1890.		1889.	
		Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.
WATERLOO :									
Conestogo	G. A. McIntyre	31.22	119	24.76	102	41.1	62	68.8	50
DUFFERIN :									
Orangeville	N. Gordon	31.87	65	24.25	62	59.5	23	88.5	24
WENTWORTH :									
Stoney Creek	C. F. Van Wagner	37.86	87	27.40	94	25.0	21	66.3	29
HALTON :									
Georgetown	J. Barber, jr	28.72	146	24.94	117	54.7	59	78.3	56
Nelson	J. Ireland	30.61	121	24.74	98	47.2	40	53.4	32
YORK :									
Aurora	Rev. R. W. Amos	25.56	90	22 76	79	57.7	42	62.2	25
Scarborough	R. Martin	30.42	124	25.42	118	42.2	50	42.8	51
Sharon	J. D. Graham	23.32	114	24.42	84	61.6	52	99.6	41
Toronto	Observatory	32.11	145	24.58	127	52.6	81	66.5	60
ONTARIO									
Oshawa	Rev. J. Middleton	29.12	86	27.41	80	30.4	17	46.4	18
LEN'X & ADDINGTON									
Denbigh	J. Lane	25.11	63	25.96	61	96.5	38	98.0	27
FRONTENAC :									
Kingston	A. P. Knight	26.29	131	26.71	124	69.1	71	88.4	49
GLENGARRY :									
Alexandria	J. Smith	30.10	125	24.21	107	97.2	71	87.3	55
CARLETON :									
Ottawa	Wm. T. Ellis	25.25	120	20.23	82	71.3	68	54.0	18
RENFREW :									
Clontarf	A. Schultz	24.40	93	22.78	103	89.1	68	97.5	46
Renfrew	A. F. Wright	17.15	76	22.66	73	67.0	38	78.7	23
Rockliffe	W. H. McIntyre	16.75	75	22.67	64	81.7	58	75.4	34
LANARK :									
Oliver's Ferry	W. J. McLean	25.36	78	25.73	73	54.0	15	65.0	26
VICTORIA :									
Lindsay	Thos. Beall	24.81	114	27.19	121	77.5	80	100.4	59
PETERBOROUGH :									
Ennismore	Thos. Tellford	30.04	109	27.15	97	59.5	45	69.5	51
Norwood	Rev. J. Carmichael	21.96	64	17.79	53	47.8	28	106.1	32
HALIBURTON :									
Haliburton	C. R. Stewart	21.32	94	24.13	94	59.3	66	82.9	48
HASTINGS :									
Bancroft	John Cleak	21.93	87	...	...	...	101.0	48	.....
Deseronto	J. Russell	21.02	85	23.06	83	53.1	34	76.2	29
Shannonville	John Kemp	22.22	55	19.79	61	50.0	21	64.0	28
MUSKOKA :									
Bala	E. B. Sutton	30.69	133	25.53	117	74.6	58	85.7	63
Beatrice	J. Hollingworth	27.38	104	25.27	99	89.8	28	105.0	41
Charlinch	C. J. Tisdall	30.24	117	27.81	116	89.8	80	96.6	62
Gravenhurst	T. M. Robinson	21.61	84	24.81	92	83.0	45	100.5	45
PARRY SOUND :									
Lynch Lake	G. Ambury	30.38	115	23.13	108	153.1	73	122 7	76
Parry Sound	Rev. R. Mosely	29.37	127	24.55	108	100.7	73	88.7	68
Sprucedale	A. McKenzie	29.39	68	24.92	65	76.3	28	72.0	23
Upland	P. Macdonald	38.85	113	33.75	111	108.7	72	104.8	67
ALGOMA :									
Cartier	Agent C.P.R	19.12	70	23.75	85	132.0	56	85.0	50
Port Arthur	W. P. Cooke	16.49	74	18.40	91	36.8	50	61.0	45
Savanne	Agent C.P.R	9.94	45	12.02	39	95.0	51	145.2	47
White River	" "	13.57	93	18.77	86	116.7	107	144.1	89
Average for the Province		28.44	100	24.90	89	64.8	44	76.1	39

THE WEATHER.

TABLE VI. Comparative Meteorological Register for the seven years 1884-90 as recorded at Toronto Observatory, in Latitude 43° 39.4' North and Longitude 5h. 17m. 34.65s. West.

Register.	1890.	1889.	1888.	1887.	1886.	1885.	1884.
	°	°	°	°	°	°	°
Average temperature	45.02	45.44	42.70	44.14	43.71	41.57	43.79
Difference from average (50 years)	+ 0.91	+ 1.33	— 1.41	+ 0.03	— 0.40	— 2.54	— 0.32
Thermic anomaly (Lat. 43° 40')	— 6.00	— 5.58	— 8.32	— 6.88	— 7.31	— 9.45	— 7.23
Highest temperature	89.4	88.7	92.0	97.2	89.5	88.6	89.6
Lowest temperature	— 2.7	—11.3	—16.1	—16.6	—22.8	—16.1	—13.3
Annual range	92.1	100.0	108·1	113.8	112.3	104.7	102.9
Average daily range	16.22	15.55	16.55	17.12	16.53	16.85	17.05
Greatest daily range	36.0	42.8	37.7	34.0	32.6	39.2	34.8
Average height of bar. at 32° Fah	29.6313	26.6177	29.6448	29.6329	20.6255	29.5933	29.6273
Difference from average (49 years)	+ .0129	— .0007	+ .0264	+ .0145	+ .0071	— .0251	+ .0089
Highest barometer	30.334	30.365	30.432	30.607	30.283	30.360	30.412
Lowest barometer	28.762	28.582	28.793	28.704	28.752	28.714	28.807
Monthly and annual ranges	1.572	1.783	1.639	1.903	1.531	1.586	1.605
Average humidity of the air	78	77	74	75	77	77	76
Difference from average	+ 1	0	— 3	— 2	0	0	— 1
Average elasticity of aqueous vapor	0.272	0.271	0.243	0.261	0.260	0.249	0.261
Average of cloudiness	0.62	0.63	0.63	0.63	0.61	0.61	0.63
Difference from average (36 years)	.00	+ .01	+ .01	+ .01	— .01	— .01	+ .01
Resultant direction of wind	N 48 W	N 63 W	N 59 W	N 46 W	N 56 W	N 62 W	N 55 W
" velocity of the wind	1.80	2.04	2.67	1.92	2.13	2.60	3.30
Average velocity (miles per hour)	9.19	9.08	9.71	9.88	9.73	9.95	10.29
Difference from average (15 years)	— 0.45	— 0.56	+ 0.07	+ 0.24	+ 0.09	+ 0.31	+ 0.65
Total amount of rain in inches	32.110	24.575	22.819	17.969	27.726	26.351	20.532
Difference from average (50 years)	+ 4.792	— 2.743	— 4.499	— 9.349	+ 0.408	— 0.967	— 6.786
Number of days of rain	145	127	133	106	112	103	123
Total amount of snow in inches	52.6	66.5	34.6	77.9	73.5	65.6	80.2
Difference from average (47 years)	—17.6	— 3.7	—35.6	+ 7.7	+ 3.3	— 4.6	+10.0
Number of days of snow	81	60	83	78	66	73	69
Number of fair days	159	187	175	203	196	203	184
Number of days completely clouded	68	79	58	76	74	65	89
Number of auroras observed	7	6	21	25	29	31	20
Possible to see auroras (No. of nights)	188	169	183	180	189	195	202
Number of thunder storms	21	24	23	22	26	19	30
Number of fogs	43	34	26	39	29	30	45
Number of hours of bright sunshine	1977.6	1909.2	2048.3	2063.5	2034.4	2018.3	1931.8
Difference from average (9 years)	—43.7	—112.1	+27.0	+42.2	+13.1	— 3.0	—89.5
Number of hours of possible sunshine	4463.3	4463.3	4474.4	4463.3	4463.3	4463.3	4474.4

RURAL AREA.

TABLE VII. Showing by County Municipalities and groups of counties the Rural Area of Ontario as returned by municipal assessors for 1890.

Counties.	Acres of assessed land.			Acres cleared.		Acres woodland.	Acres swamp, marsh or water.	Per cent. cleared.
	Resident.	Non-resident.	Total occupied.	1890.	1889.			
Essex	409,537	20,618	430,155	212,120	202,984	197,986	20,049	49.3
Kent	542,035	21,591	563,626	304,453	294,498	239,034	20,139	54.0
Elgin	434,884	2,687	437,571	279,298	273,754	145,415	12,858	63.8
Norfolk	390,583	6,567	397,150	234,108	231,432	133,714	29,328	58.9
Haldimand	280,161	13	280,174	204,371	201,729	63,883	11,920	72.9
Welland	220,763	6,378	227,141	163,475	162,387	53,467	10,199	72.0
Totals	2,277,963	57,854	2,335,817	1,397,825	1,366,784	833,499	104,493	59.8
Lambton	633,123	26,412	659,535	306.379	295,376	343,042	10,114	46.5
Huron	788,511	10,459	798,970	563,959	554,226	138,776	96,235	70.6
Bruce	789,966	26,378	816,344	458,363	452,162	254,017	103,964	56.1
Totals	2,211,600	63,249	2,274,849	1,328,701	1,301,764	735,835	210,313	58.4
Grey	1,029,194	29,763	1,058,957	559,481	551,648	341,481	157,995	52.8
Simcoe	897,173	56,413	953,586	482,378	475,507	433,150	38,058	50.6
Totals	1,926,367	86,176	2,012,543	1,041,859	1,027,155	774,631	196,053	51.8
Middlesex	748,546	8,179	756,725	534,229	528,082	209,050	13,446	70.6
Oxford	470,655	949	471,604	346,886	343,550	96,586	28,132	73.6
Brant	213,716	2,325	216,041	171,136	172,562	25,294	19,611	79.2
Perth	512,741	5,102	517,843	365,633	363,787	97,300	54,910	70.6
Wellington	622,157	5,281	627,438	440,351	440,667	102,729	84,358	70.2
Waterloo	300,825	5,206	306,031	239,921	234,979	48,754	17,356	78.4
Dufferin	341,474	13,097	354,571	194,853	187,977	77,717	82,001	55.0
Totals	3,210,114	40,139	3,250,253	2,293,009	2,271,604	657,430	299,814	70.5
Lincoln	187,483	4,074	191,557	153,241	147,542	36,146	2,170	80.0
Wentworth	270,291	3,143	273,434	209,240	207,559	41,555	22,639	76.5
Halton	222,791	935	223,726	169,726	165,388	39,389	14,611	75.9
Peel	287,999	203	288,202	241,351	238,290	31,971	14,880	83.7
York	526,841	7,774	534,615	410,287	407,599	67,638	56,690	76.7
Ontario	484,581	14,195	498,776	340,473	335,463	93,031	65,272	68.3
Durham	366,774	1,943	368,717	272,581	273,509	67,590	28,546	73.9
Northumberland	429,248	4,625	433,873	321.327	313,987	88,622	23,924	74.1
Prince Edward	228,553	3,089	231,642	182,393	181,481	39,423	9,826	78.7
Totals	3,004,561	39,981	3,044,542	2,300,619	2,270,818	505,365	238.558	75.6
Lennox & Addington	369,884	44,941	414,825	204,917	206,312	121,983	87,925	49.4
Frontenac	579,779	98,568	678,347	219,811	214,396	294,688	163,848	32.4
Leeds and Grenville	732,177	8,427	740,604	419,125	417,175	203,498	117,981	56.6
Dundas	234,557	2,500	237,057	135,841	134,166	64,692	37,524	57.3
Stormont	248,909	2,666	251,575	117,631	115,779	114,711	19,233	46.8
Glengarry	287,288	35	287,323	147,294	146,322	121,887	18,142	51.3
Prescott	263,810	21,711	285,521	138,491	137,127	118,015	29,015	48.5
Russell	237,297	15,278	252,575	80,516	75,548	151,435	20 624	31.9
Carleton	550,289	11,533	561,822	289,943	285,941	142,314	129,565	51.6
Renfrew	862,715	31,863	894,578	262,716	262,561	554,678	76,184	29.4
Lanark	635,159	34,088	669,247	285,151	289,102	264,770	119,326	42.6
Totals	5,001,864	271,610	5,273,474	2,301,436	2,284,429	2,152,671	819,367	43.6
Victoria	503,619	67,056	570,675	244,356	238,282	183,208	143,111	42.8
Peterborough	514,120	26,925	541,045	232,351	221,723	249,276	59,418	42.9
Haliburton	544,554	17,481	562,035	29,907	29,695	498,321	33,807	5.3
Hastings	909,342	66,092	975,434	332,858	334,750	497,313	145,263	34.1
Totals	2,471,635	177,554	2,649,189	839,472	824,450	1,428,118	381,599	31.7
Muskoka	445,613	69,363	514,976	55,708	52,686	396,994	62,274	10.8
Parry Sound	415,797	39,433	455,230	41,985	35,817	375,082	38,163	9.2
*Nipissing	143,341	26,175	169,516	11,333	8,632	152,446	5,737	6.7
†Algoma	346,271	91,621	437,892	46,752	40,969	331,376	59,764	10.7
Totals	1,351,022	226,592	1,577,614	155,778	138,104	1,255,898	165,938	9.9
The Province. 1890	21,455,126	963,155	22,418,281	11,658,699	11,485,108	8,343,447	2,416,135	52.0
The Province. 1889	21,294,019	984,619	22,278,638	.....	.....	8,451,181	2,342,349	51.5

* Not including the organised township of McKim.
† Not including the acreages of the organised townships of Keewatin, Neebing, Rat Portage and Shuniah.

AREA AND PRODUCE—FALL WHEAT.

TABLE VIII. Showing by County Municipalities and groups of Counties the area and produce of Fall Wheat in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	25,954	428,241	16.5	29,302	460,041	15.7	31,127	609,295	19.6
Kent	48,259	965,180	20.0	57,542	840,113	14.6	59,240	1,159,579	19.6
Elgin	39,096	836,654	21.4	38,603	629,229	16.3	43,435	843,696	19.4
Norfolk	30,579	617,696	20.2	31,536	460,426	14.6	32,729	584,795	17.9
Haldimand	29,515	442,725	15.0	33,409	481,090	14.4	32,736	528,172	16.1
Welland	20,313	345,321	17.0	19,082	284,322	14.9	22,238	358,707	16.1
Totals	193,716	3,635,817	18.8	209,474	3,155,221	15.1	221,505	4,084,244	18.4
Lambton	29,998	545,964	18.2	36,535	610,135	16.7	34,447	651,547	18.9
Huron	44,978	989,516	22.0	53,582	723,357	13.5	65,064	1,274,988	19.6
Bruce	32,789	711,521	21.7	37,084	478,384	12.9	46,738	899,231	19.2
Totals	107,765	2,247,001	20.9	127,201	1,811,876	14.2	146,249	2,825,766	19.3
Grey	18,759	333,910	17.8	25,426	333,081	13.1	26,600	514,968	19.4
Simcoe	47,946	872,617	18.2	56,082	1,003,868	17.9	53,632	1,107,819	20.7
Totals	66,705	1,206,527	18.1	81,508	1,336,949	16.4	80,232	1,622,787	20.2
Middlesex	60,169	1,365,836	22.7	59,411	879,283	14.8	71,512	1,407,630	19.7
Oxford	33,927	800,677	23.6	34,286	582,862	17.0	38,401	769,246	20.0
Brant	21,398	468,616	21.9	21,437	342,992	16.0	28,789	533,412	18.5
Perth	29,642	637,303	21.5	39,474	528,952	13.4	43,755	859,752	19.6
Wellington	12,102	231,148	19.1	16,672	253,414	15.2	24,914	494,306	19.8
Waterloo	32,550	696,570	21.4	36,128	610,563	16.9	39,013	801,145	20.5
Dufferin	4,894	89,071	18.2	4,747	66,933	14.1	9,955	190,602	19.1
Totals	194,682	4,289,221	22.0	212,155	3,264,999	15.4	256,339	5,056,093	19.7
Lincoln	18,186	318,255	17.5	18,764	335,876	17.9	21,262	382,800	18.0
Wentworth	23,755	406,211	17.1	23,679	367,025	15.5	30,032	550,088	18.3
Halton	16,284	260,544	16.0	20,415	453,213	22.2	21,419	412,982	19.3
Peel	16,129	288,709	17.9	22,804	433,276	19.0	25,380	535,809	21.1
York	24,134	514,054	21.3	29,855	638,897	21.4	35,650	782,327	21.9
Ontario	4,153	88,044	21.2	5 307	93,934	17.7	8,990	198,033	22.0
Durham	4,242	92,900	21.9	5,603	85,166	15.2	3,670	74,526	20.3
Northumberland	12,873	262,609	20.4	17,960	237,072	13.2	11,296	229,260	20.3
Prince Edward	3,345	76,935	23.0	1,863	41,918	22.5	2,231	40,062	18.0
Totals	123,101	2,308,261	18.8	146,250	2,686,377	18.4	159,930	3,205,887	20.0
Lennox and Addington	2,651	50,369	19.0	2,649	49,536	18.7	2,144	37,769	17.6
Frontenac	707	10,888	15.4	947	15,247	16.1	1,656	30,669	18.5
Leeds and Grenville	2,672	40,614	15.2	3,790	68,220	18.0	4,875	89,214	18.3
Dundas	285	4,275	15.0	353	7,237	20.5	1,025	18,389	17.9
Stormont	127	1,524	12.0	138	2,470	17.9	612	11,083	18.1
Glengarry	65	813	12.5	104	1,872	18.0	543	8,891	16.4
Prescott	45	540	12.0	.....	.....	.....	71	882	12.4
Russell	27	592	16.0	265	4,240	16.0	209	3,693	17.7
Carleton	778	14,938	19.2	373	6,677	17.9	1,423	21,339	15.0
Renfrew	418	7,942	19.0	214	5,050	23.6	896	15,885	17.7
Lanark	2,177	27,430	12.6	3,688	70,810	19.2	3,089	58,259	18.9
Totals	9,952	159,925	16.1	12,521	231,359	18.5	16,543	296,073	17.9
Victoria	2,825	43,223	15.3	5,592	76,610	13.7	7,951	156,275	19.7
Peterborough	8,355	132,845	15.9	13,495	160,591	11.9	10,186	198,507	19.5
Haliburton	271	3,686	13.6	225	3,218	14.3	134	2,080	15.5
Hastings	11,825	224,675	19.0	13,017	264,245	20.3	9,100	177,301	19.5
Totals	23,276	404,429	17.4	32,329	504,664	15.6	27,371	534,163	19.5
Muskoka	32	480	15.0	106	1,855	17.5	65	1,123	17.3
Parry Sound	157	1,963	12.5	30	450	15.0	48	771	16.1
Nipissing	20	276	13.8	.....	.....	.....	2	31	13.8
Algoma	695	13,483	19.4	541	8,115	15.0	439	8,602	19.6
Totals	904	16,202	17.9	677	10,420	15.4	554	10,527	19.0
The Province	720,101	14,267,383	19.8	822,115	13,001,865	15.8	908,723	17,635,540	19.4

AREA AND PRODUCE—SPRING WHEAT.

TABLE IX. Showing by County Municipalities and groups of Counties the area and produce of Spring Wheat in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	2,907	38,663	13.3	679	8,963	13.2	1,671	25,020	15.0
Kent	10,243	146,474	14.3	2,149	37,608	17.5	3,524	54,973	15.6
Elgin	1,436	23,407	16.3	491	7,414	15.1	1,694	26,036	15.4
Norfolk	769	10,535	13.7	440	6,028	13.7	823	11,751	14 3
Haldimand	7,299	81,019	11.1	1,894	23,107	12.2	3,278	43,743	13.3
Welland	894	10,549	11.8	258	2,683	10.4	1,431	19,833	13.9
Totals	23,548	310,647	13.2	5,911	85,803	14.5	12,421	181,356	14.6
Lambton	7,098	107,180	15.1	1,714	22,796	13.3	6,309	91,957	14.6
Huron	9,379	152,878	16.3	2,235	29,279	13.1	16,495	222,432	13.5
Bruce	13,768	209,274	15.2	8,017	97,006	12.1	13,458	187,193	13.9
Totals	30,245	469,332	15.5	11,966	149,081	12.5	36,262	501,582	13.8
Grey	33,734	448,662	13.3	23,116	286,638	12.4	40,440	563,998	13.9
Simcoe	36,774	485,417	13.2	30,898	451,111	14.6	34,966	528,336	15.1
Totals	70,508	934,079	13.2	54,014	737,749	13.7	75,406	1,092,334	14.5
Middlesex	4,936	85,393	17.3	1,216	18,483	15.2	10,487	159,347	15.2
Oxford	7,168	117,555	16.4	1,543	25,151	16.3	9,195	148,379	16.1
Brant	1,563	26,415	16.9	53	832	15.7	1,214	16,917	13.9
Perth	9,900	172,260	17.4	1,853	31,872	17.2	12,144	179,140	14.8
Wellington	20,826	366,538	17.6	8,103	123,166	15.2	20,034	293,200	14.6
Waterloo	2,846	47,528	16.7	361	5,776	16.0	4,822	71,156	14.8
Dufferin	24,810	377,112	15.2	19,077	221,293	11.6	20,766	295,930	14.3
Totals	72,049	1,192,801	16.6	32,206	426,573	13.2	78,662	1,164,069	14.8
Lincoln	3,017	34,997	11.6	888	11,810	13.3	2,185	31,643	14.5
Wentworth	5,135	73,431	14.3	907	11,700	12.9	2,723	40,558	14 9
Halton	8,820	121,716	13.8	2,540	42,672	16.8	3,952	59,293	15.0
Peel	22,470	343,791	15.3	8,822	140,270	15.9	13,267	219,047	16.5
York	32,894	427,622	13.0	20,524	320,174	15.6	26,392	442,525	16.8
Ontario	51,289	538,535	10.5	41,582	681,945	16.4	46,943	789,381	16.8
Durham	35,779	379,257	10.6	25,507	390,257	15.3	36,550	587,536	16.1
Northumberland	29,210	315,468	10.8	18,190	203,728	11.2	27,596	379,181	13.7
Prince Edward	6,884	88,804	12.9	3,716	39,390	10.6	6,543	89,359	13.7
Totals	195,498	2,323,621	11.9	122,676	1,841,946	15.0	166,151	2,638,523	15.9
Lennox and Addington	6,510	67,053	10.3	2,689	35,495	13.2	5,970	85,917	14.4
Frontenac	9,398	98,679	10.5	8,536	92,189	10.8	8,720	127,791	14.7
Leeds and Grenville	13,181	127,856	9.7	10,731	123,407	11.5	13,161	204,681	15.6
Dundas	4,236	56,339	13.3	3,811	51,449	13.5	4,584	85,828	18.7
Stormont	4,073	56,207	13.8	4,657	58,213	12.5	4,477	79,782	17.8
Glengarry	7,967	91,621	11.5	7,589	103,969	13.7	7,898	127,259	16.1
Prescott	9,060	122,310	13.5	7,904	81,411	10.3	8,218	128,725	15.7
Russell	3,559	48,402	13.6	3,469	48,219	13.9	4,039	67,518	16.7
Carleton	25,165	269,266	10.7	19,223	349,859	18.2	21,800	366,573	16.8
Renfrew	26,482	325,729	12.3	23,446	459,542	19.6	24,455	399,614	16.3
Lanark	16,029	144,261	9.0	14,443	155,984	10.8	14,504	210,396	14.5
Totals	125,660	1,407,723	11.2	106,498	1,559,737	14.6	117,826	1,884,084	16.0
Victoria	35,477	457,653	12.9	25,336	364,838	14.4	32,048	474,935	14.8
Peterborough	28,920	335,472	11.6	22,515	279,186	12.4	25,638	342,874	13.4
Haliburton	1,940	21,340	11.0	1,291	20,398	15.8	1,366	17,574	12.9
Hastings	10,464	122,429	11.7	9,740	117,854	12.1	14,853	224,710	15.1
Totals	76,801	936,894	12.2	58,882	782,276	13.3	73,905	1,060,093	14.3
Muskoka	1,208	16,550	13.7	886	12,050	13.6	1,372	20,251	14.8
Parry Sound	1,143	13,145	11.5	569	7,454	13.1	1,384	22,097	16.0
Nipissing	260	3,718	14.3	.....	.....	.....	29	413	14.3
Algoma	4,833	75,395	15.6	5,002	95,038	19.0	6,008	115,025	19.1
Totals	7,444	108,808	14.6	6,457	114,542	17.7	8,793	157,786	17.9
The Province	601,753	7,683,905	12.8	398,610	5,697,707	14.3	569,426	8,679,827	15.2

AREA AND PRODUCE.—BARLEY.

TABLE X. Showing by County Municipalities and groups of Counties the area and produce of Barley in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Arces.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	7,894	177,616	22.5	4,289	103,365	24.1	3,325	86,457	26.0
Kent	8,739	209,736	24.0	8,985	252,479	28.1	6,734	181,850	27.0
Elgin	8,055	190,904	23.7	4,327	113,800	26.3	4,804	128,731	26.8
Norfolk	6,088	130,283	21.4	6,418	140,554	21.9	6,171	157,189	25.5
Haldimand	12,672	198,950	15.7	13,014	287,609	22.1	14,209	317,213	22.3
Welland	3,597	58,991	16.4	3,037	67,118	22.1	3,798	87,960	23.2
Totals	47,045	966,480	20.5	40,070	964,925	24.1	39,041	959,400	24.6
Lambton	17,339	360,651	20.8	15,331	389,407	25.4	14,890	384,229	25.8
Huron	32.386	819,366	25.3	32,886	861,613	26.2	27,897	764 596	27.4
Bruce	16,622	433,834	26 1	21,691	483,709	22.3	19,108	494,756	25.9
Totals	66,347	1,613,851	24.3	69,908	1,734,729	24.8	61,895	1,643,581	26.6
Grey	15,726	396,295	25.2	20,142	443,124	22.0	22,500	552,066	24.5
Simcoe	30,632	722,915	23.6	40,301	1,092,157	27.1	31,323	806,254	25.7
Totals	46,358	1,119,210	24.1	60,443	1,535,281	25.4	53,823	1,358,320	25.2
Middlesex	17,752	434,924	24.5	16,433	404,252	24.6	15,392	406,242	26.4
Oxford	16,542	453,251	27.4	18,557	519,596	28.0	17,019	507,053	29.8
Brant	22,046	540,127	24.5	25,298	715,933	28.3	19,029	517,419	27.2
Perth	18,499	514,272	27.8	17,728	540.704	30.5	17,725	521,933	29.4
Wellington	34,022	932,203	27.4	43,289	1,320,315	30.5	35,779	1,010,069	28.2
Waterloo	20,843	619,037	29.7	21,268	686.956	32.3	17,047	522,355	30.6
Dufferin	12,502	312,550	25.0	14,307	346,229	24.2	12,024	305,773	25.4
Totals	142,206	3,806,364	24.8	156,880	4,533,985	28.9	134,015	3,790,844	28.3
Lincoln	5,315	101,517	19.1	5,103	116,859	22.9	4,454	109,466	24.6
Wentworth	15,466	335,612	21.7	17,238	436,121	25.3	13,306	365,544	27.5
Halton	12,018	288,432	24.0	16,067	485,923	30.2	13,194	368,973	28.0
Peel	36,832	865,552	23.5	45,932	1,336,621	29.1	35,730	981,913	27.5
York	51,041	1,117,798	21.9	69,073	2,155,078	31.2	57,243	1,648,561	28.8
Ontario	34,162	717.402	21.0	49,535	1,466,236	29.6	38,940	1,097,803	28.2
Durham	37,797	650,108	17.2	54,724	1,532,272	28.0	46,670	1,232,523	26.4
Northumberland	32,423	573,887	17.7	51,234	1,168,135	22.8	45,022	1,004,630	22.3
Prince Edward	31,699	618,131	19.5	43,772	1,063,660	24.3	40,218	827,588	20.6
Totals	256,753	5,268,439	20.5	352,678	9,760,205	27.7	294,777	7,637,001	25.9
Lennox and Addington.	25,854	447,274	17.3	38,464	950,061	24.7	38,873	851,769	21.9
Frontenac	12,529	236,798	18.9	20,499	412,030	20.1	17,956	406,886	22.7
Leeds and Grenville	8,327	151,551	18.2	10,795	249,365	23.1	10,738	264,527	24.6
Dundas	5,336	108,321	20.3	5,741	136,636	23.8	6,608	192,912	29.2
Stormont	3,289	74,003	22.5	1,935	49,343	25.5	2,400	65,249	27.2
Glengarry	2,466	50,306	20.4	2,591	58,298	22.5	2,242	51,085	22.8
Prescott	5,005	110,110	22.0	4,233	108,788	25.7	3,021	79,543	26.3
Russell	2,222	52,439	23.6	1,849	52,881	28.6	1,541	37,819	24.5
Carleton	9,353	231,954	24.8	9,418	271,238	28.8	8,039	231,248	28.8
Renfrew	1,681	31,771	18.9	2,045	64,009	31.3	1,469	35,331	24.1
Lanark	3,554	75,345	21.2	3,975	109.313	27.5	2,925	75,731	25.9
Totals	79,616	1,569,872	19.7	101,545	2,461,962	24.2	95,812	2,292,100	23.9
Victoria	25,692	565,224	22.0	37,176	1,003,752	27.0	30,659	769,979	25.1
Peterborough	7,924	159,272	20.1	14,834	375,300	25.3	13,287	320,130	24.1
Haliburton	308	6,252	20.3	274	6,987	25.5	281	6,672	23.7
Hastings	26,848	477,894	17.8	39,988	975,707	24.4	38,977	885,587	22.7
Totals	60,772	1,208,642	19.9	92,272	2,361,746	25.6	83,204	1,982,368	23.8
Muskoka	568	11,360	20.0	451	9,381	20.8	535	11,516	21.5
Parry Sound	755	16,459	21.8	474	10,049	21.2	661	15,038	22.8
Nipissing	191	4,326	22.3				21	480	22.3
Algoma	712	15,166	21.3	565	14,125	25.0	581	15,086	26.0
Totals	2,229	47,311	21.2	1,490	33,555	22.5	1,798	42,120	23.4
The Province	701,326	15,600,169	22.2	875,286	23,386,388	26.7	764,365	19,705,734	25.8

AREA AND PRODUCE.—OATS.

TABLE XII. Showing by County Municipalities and groups of Counties the area and produce of Oats in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years, 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	40,809	1,048,791	25.7	33,899	1,159,346	34.2	30,554	1,153,952	37.8
Kent	35,034	1,005,476	28.7	36,066	1,395,754	38.7	32,886	1,301,630	39.6
Elgin	34,638	886,733	25.6	35,743	1,179,519	33.0	32,662	1,218,548	37.3
Norfolk	28,135	602,089	21.4	28,541	713,525	25.0	26,869	847,818	31.6
Haldimand	25,548	505,850	19.8	27,905	798,083	28.6	23,031	746,902	32.4
Welland	21,642	380,899	17.6	22,810	670,614	29.4	19,774	608,565	30.8
Totals	185,806	4,429,838	23.8	184,964	5,916,841	32.0	165,776	5,877,415	35 5
Lambton	55,419	1,344,149	24.7	46,396	1,503,230	32.4	40,977	1,456,480	35.5
Huron	94,630	2,952,456	31.2	95,918	3,194,069	33.3	78,662	2,860,364	36.4
Bruce	73,700	2,211,000	30.0	75,463	1,939,399	25.7	61,165	1,970,117	32.2
Totals	223,749	6,507,605	29.1	217,777	6,636,698	30.5	180,804	6,286,961	34.8
Grey	101,957	3,028,123	29.7	114,396	3,409,001	29.8	88,888	2,805,811	31.6
Simcoe	75,668	2,292,740	30.3	78,390	2,884,752	36.8	64,608	2,191,339	33.9
Totals	177,625	5,320,863	30.0	192,786	6,293,753	32.6	153,496	4,997,150	32.6
Middlesex	84,083	2,522,490	30.0	87,854	3,074,890	35.0	73,440	2,770,967	37.7
Oxford	58,287	1,731,124	29.7	62 828	2,293,222	36.5	53,217	2,024,402	38.0
Brant	20,690	587,596	28.4	19,184	671,440	35.0	18,251	659,125	36.1
Perth	68,435	2,436,286	35.6	68,184	2,706,905	39.7	57,046	2,311,265	40.5
Wellington	91,045	2,968,067	32.6	88,695	3,538,931	39.9	72,253	2,642,366	36.6
Waterloo	44,317	1,316,215	29.7	40,464	1,513,354	37.4	35,932	1,337,095	37.2
Dufferin	40,040	1,057,056	26.4	35,410	1,193,317	33.7	29,954	1,010,792	33.7
Totals	406,897	12,618,834	31.0	402,619	14,992,059	37.2	340,093	12,756,012	37.5
Lincoln	20,232	418,802	20.7	17,467	534,490	30.6	17,815	583,689	32.8
Wentworth	30,455	785,739	25.8	32,400	949,320	29.3	28,832	1,037,447	36.0
Halton	22,443	626,160	27.9	21,926	835,381	38.1	19,040	682,716	35.9
Peel	37,109	1,105,848	29.8	36,319	1,430,969	39.4	29,791	1,103,329	37.0
York	76,512	2,433,082	31.8	72,099	2,912,800	40.4	63,679	2,528,619	39.7
Ontario	54,935	1,659,037	30.2	59,267	2,441,800	41.2	49,297	1,879,508	38.1
Durham	36,511	938,333	25.7	37,726	1,331,728	35.3	33,784	1,188,536	35.2
Northumberland	34,521	869,929	25.2	34,088	1,032,866	30.3	30,322	896,035	29.6
Prince Edward	14,488	378.137	26.1	13,592	400,964	29.5	13,571	376,690	27.8
Totals	327,206	9,215,067	28.2	324,884	11,870,318	36.5	286,131	10,276,569	35.9
Lennox and Addington	25,212	562,228	22.3	24,704	741,120	30.0	22,410	629,168	28.1
Frontenac	29,902	702,697	23.5	33,104	923,602	27.9	27,656	779,185	28.2
Leeds and Grenville	72,221	1,661,083	23.0	76,443	2,232,136	29.2	65,756	2,059,724	31.3
Dundas	29,823	754,522	25.3	33,947	977,674	28.8	29,551	1,035,376	35.0
Stormont	22,342	625,576	28.0	24,727	712,138	28.8	24,137	827,565	34.3
Glengarry	30,480	697,992	22.9	31,651	870,403	27.5	30,168	951,253	31.5
Prescott	31,013	790,832	25.5	28,427	770,372	27.1	26,446	814,043	30.8
Russell	22.417	656,818	29.3	18,900	553,770	29.3	18,495	589,586	31 9
Carleton	63,724	1,816,134	28.5	70,851	2,160,956	30.5	60,231	2,077,789	34.5
Renfrew	43,262	1,163,748	26.9	50,287	1,971,250	39.2	40,800	1,295,443	31.8
Lanark	41,012	1,099,122	26.8	44,446	1,257,822	28.3	37,111	1,139,396	30.7
Totals	411,408	10,530,752	25.6	437,487	13,171,243	30.1	382,761	12,198,526	31.9
Victoria	42,032	1,269,366	30.2	48,058	1,691,642	35.2	38,855	1,289,503	33.2
Peterborough	31,797	880,777	27.7	36,528	1,220,035	33.4	29,932	935,178	31.2
Haliburton	5,777	155,979	27.0	6,822	216,940	31.8	5,127	140,970	27.5
Hastings	43,330	1,122,247	25.9	47,662	1,601,443	33.6	41,953	1,233,800	29.4
Totals	122,936	3,428,369	27.9	139,070	4,730,060	34.0	115,867	3,599,451	31.1
Muskoka	10,558	280,843	26.6	11,414	342,420	30.0	8,899	257,320	28.9
Parry Sound	7,569	196,037	25.9	6,036	164.179	27.2	4,929	148,888	30.2
Nipissing	1,668	49,039	29.4	.....	.....	.....	185	5,449	29.4
Algoma	6,944	190,960	27.5	6,407	228,730	35.7	4,549	162,535	35.7
Totals	26,739	716,879	26.8	23,857	735,329	30.8	18,562	574,192	30.9
The Province	1,882,366	52,768,207	28.0	1,923.444	64,346,301	33.5	1,643,490	56,566,276	34.4

AREA AND PRODUCE—RYE.

TABLE XII. Showing by County Municipalities and groups of Counties the area and produce of Rye in Ontario for the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	873	14,841	17.0	845	15,844	18.8	804	16,305	20.3
Kent	1,484	32,203	21.7	806	17,732	22.0	737	15,858	21.5
Elgin	1,116	18,972	17.0	1,834	35,396	19.3	1,313	23,675	18.0
Norfolk	9,714	124,339	12.8	8,539	76,851	9.0	7,730	106,187	13.7
Haldimand	564	7,896	14.0	477	4,675	9.8	809	13,087	16.2
Welland	243	3,645	15.0	641	10,641	16.6	618	10,602	17.2
Totals	13,994	201,896	14.4	13,142	161,139	12.3	12,011	185,714	15.5
Lambton	462	8,778	19.0	312	5,538	17.8	249	4,243	17.0
Huron	306	4,590	15.0	232	3,480	15.0	270	4,650	17.2
Bruce	964	19,280	20.0	437	8,740	20.0	460	8,404	18.3
Totals	1,732	32,648	18.8	981	17,758	18.1	979	17,297	17.7
Grey	1,031	14,125	13.7	403	8,181	20.3	574	9,956	17.3
Simcoe	3,038	47,697	15.7	2,500	44,000	17.6	2,373	42,646	18.0
Totals	4,069	61,822	15.2	2,903	52,181	18.0	2,947	52,602	17.8
Middlesex	892	15,342	17.2	553	9,290	16.8	519	8,955	17.2
Oxford	1,502	24,032	16.0	1,539	26,625	17.3	1,238	19,272	15.6
Brant	1,621	27,395	16.9	1,596	18,354	11.5	1,096	16,427	15.0
Perth	79	1,185	15.0	44	880	20.0	190	2,807	14.8
Wellington	622	10,574	17.0	935	15,147	16.2	822	14,647	17.8
Waterloo	576	10,080	17.5	453	4,892	10.8	534	9,219	17.3
Dufferin	357	5,177	14.5	329	3,455	10.5	711	12,616	17.7
Totals	5,649	93,785	16.6	5,449	78,643	14.4	5,110	83,943	16.4
Lincoln	606	7,757	12.8	139	2,349	16.9	433	6,641	15.3
Wentworth	965	14,475	15.0	1,186	17,078	14.4	980	16,602	16.9
Halton	877	11,664	13.3	415	8,300	20.0	528	8,679	16.4
Peel	586	9,786	16.7	955	14,325	15.0	1,278	25,065	19.6
York	1,089	20,691	19.0	1,326	27,846	21.0	1,671	27,884	16.7
Ontario	1,548	22,291	14.4	1,776	29,837	16.8	2,648	46,341	17.5
Durham	3,908	55,103	14.1	3,917	65,414	16.7	4,851	73,804	15.2
Northumberland	12,365	155,799	12.6	10,795	137,097	12.7	11,425	153,409	13.4
Prince Edward	6,329	88,606	14.0	10,039	156,608	15.6	8,908	124,613	14.0
Totals	28,273	386,172	13.7	30,548	458,854	15.0	32,722	483,038	14.8
Lennox and Addington	3,450	49,680	14.4	4,103	61,955	15.1	4,940	73,181	14.8
Frontenac	3,391	48,491	14.3	3,229	54,570	16.9	3,691	60,508	16.4
Leeds and Grenville	4,153	57,727	13.9	1,780	31,862	17.9	5,999	104,144	17.4
Dundas	486	10,400	21.4	897	17,940	20.0	1,322	29,833	22.6
Stormont	332	5,810	17.5	240	4,200	17.5	455	9,349	20.5
Glengarry	201	3,015	15.0	.....	.....	.....	68	1,136	16.7
Prescott	54	783	14.5	183	3,349	18.3	253	4,657	18.4
Russell	471	9,891	21.0	12	236	19.7	234	4,656	19.9
Carleton	4,558	82,500	18.1	3,808	81,110	21.3	5,957	107,864	18.1
Renfrew	9,126	156,055	17.1	5,312	126,957	23.9	6,773	131,781	19.5
Lanark	3,354	50,981	15.2	2,508	43,639	17.4	4,532	84,378	18.6
Totals	29,576	475,333	16.1	22.072	425,818	19.3	34,224	611,487	17.9
Victoria	1,819	31,651	17.4	1,240	24,056	19.4	1,232	21,199	17.2
Peterborough	6,116	86,236	14.1	2,295	27,999	12.2	3,462	53,314	15.4
Haliburton	410	6,683	16.3	141	2,637	18.7	266	4,464	16.8
Hastings	10,513	170,311	16.2	10,398	165,328	15.9	13,721	213,046	15.5
Totals	18,858	294,881	15.6	14,074	220,020	15.6	18,681	292,023	15.6
Muskoka	367	6,166	16.8	290	4,437	15.3	386	7,287	18.9
Parry Sound	154	3,711	24.1	141	3,215	22.8	322	6,765	21.0
Nipissing	82	1,558	19.0	.....	.....	.....	9	173	19.0
Algoma	307	5,373	17.5	506	9,614	19.0	219	3,835	17.5
Totals	910	16,808	18.5	937	17,266	18.4	936	18,060	19.3
The Province	103,061	1,563,345	15.2	90,106	1,431,679	15.9	107,610	1,744,164	16.2

AREA AND PRODUCE—PEASE.

TABLE XIII. Showing by County Municipalities and groups of Counties the area and produce of Pease in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90: also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	4,179	73,968	17.7	3,665	59,373	16.2	3,872	72,098	18.6
Kent	12,771	192,842	15.1	14,847	246,460	16.6	10,747	204,897	19.1
Elgin	19,030	249,293	13 1	15,055	230,342	15.3	13,014	232,766	17.9
Norfolk	23,842	381,472	16.0	18,808	376,160	20.0	15,804	301,239	19.1
Haldimand	18,316	289,393	15.8	14,981	247,187	16.5	13,766	252,254	18.3
Welland	6,058	75,725	12.5	4,481	84,243	18.8	4,259	71,763	16.8
Totals	84,196	1,262,693	15.0	71,837	1,243,765	17.3	61,462	1,135,017	18.5
Lambton	15,844	240,829	15.2	12,009	180,135	15.0	10,082	186,297	18.5
Huron	45,558	920,272	20.2	36,290	718,542	19.8	33,043	728,485	22.0
Bruce	43,548	1,062,571	24.4	40,353	730,389	18.1	37,641	848,547	22.5
Totals	104,950	2,223,672	21.2	88,652	1,629,066	18.4	80,766	1,763,329	21.8
Grey	48,563	1,058,673	21.8	51,523	1,143,811	22.2	45,977	984,611	21.4
Simcoe	37,511	810,238	21.6	34,542	746,107	21.6	32,044	683,745	21.3
Totals	86,074	1,868,911	21.7	86,065	1,889,918	22.0	78,021	1,668,356	21.4
Middlesex	29,829	486,213	16.3	28,773	417,209	14.5	22,739	432,041	19.0
Oxford	20,656	324,299	15.7	18,841	265,658	14.1	15,850	328,759	20.7
Brant	12,329	245,347	19.9	9,728	230,554	23.7	9,180	184,230	20.1
Perth	29,357	575,397	19.6	28,165	422,475	15.0	23,538	521,762	22.2
Wellington	43,377	915,255	21.1	39,591	779,943	19.7	37,776	846,382	22.4
Waterloo	19,999	415,979	20.8	16,237	298,761	18.4	14,784	326,695	22.1
Dufferin	15,354	322,434	21.0	13,336	282,723	21.2	11,961	250,027	20.9
Totals	170,901	3,284,924	19.2	154,671	2,697,323	17.4	135,828	2,889,896	21.3
Lincoln	7,701	120,136	15.6	5,255	89,861	17.1	4,968	88,944	17.9
Wentworth	14,046	276,706	19.7	13,181	222,759	16.9	10,933	220,469	20.2
Halton	13,729	270,461	19.7	10,297	205,940	20.0	10,633	225,090	21.2
Peel	20,465	425,672	20.8	15,946	279,055	17.5	14,257	292,727	20.5
York	36,074	771,984	21.4	32,240	648,024	20.1	28,706	634,088	22.1
Ontario	27,973	475,541	17.0	28,164	518,218	18.4	26,646	543,053	20.4
Durham	22,130	371,784	16.8	19,989	335,815	16.8	21,496	409,839	19.1
Northumberland	20,191	411,896	20.4	19,056	388,742	20.4	20,157	344,193	17.1
Prince Edward	18,907	414,063	21.9	18,630	340,929	18.3	13,482	238,989	17.7
Totals	181,216	3,538,243	19.5	162,758	3,029,343	18.6	151,278	2,997,392	19.8
Lennox and Addington	9,861	182,429	18.5	8,805	175,220	19.9	8,825	160,682	18.2
Frontenac	10,294	181,174	17.6	9,048	135,720	15.0	10,877	190,740	17.5
Leeds and Grenville	5,493	95,029	17.3	6,388	101,569	15.9	6,276	117,288	18.7
Dundas	1,262	31,298	24.8	1,526	18,770	12.3	1,672	35,759	21.4
Stormont	1,637	35,359	21.6	2,110	18,990	9.0	2,516	50,439	20.0
Glengarry	3,981	72,454	18.2	3,920	47,040	12.0	5,682	101,309	17.8
Prescott	6,396	111,930	17.5	4,306	53,394	12.4	8,604	138,436	16.1
Russell	4,039	76,741	19.0	1,869	28,035	15.0	3,739	72,113	19.3
Carleton	10,011	228,251	22.8	12,047	273,467	22.7	12,757	271,759	21.3
Renfrew	21,276	472,327	22.2	20,695	564,974	27.3	20,632	424,369	20.6
Lanark	11,346	230,324	20.3	11,712	260,006	22.2	11,369	239,822	21.1
Totals	85,596	1,717,316	20.1	82,426	1,677,185	20.3	92,949	1,802,716	19.4
Victoria	17,117	379,997	22.2	15,576	353,575	22.7	16,009	327,488	20.5
Peterborough	16,143	356,760	22.1	14,759	318,794	21.6	15,093	287,642	19.1
Haliburton	2,097	39,843	19.0	1,507	29,839	19.8	1,595	30,194	18.9
Hastings	20,707	447,271	21 6	20,225	420,680	20.8	18,510	328,475	17.7
Totals	56,064	1,223,871	21.8	52,067	1,122,888	21.6	51,207	973,799	19.0
Muskoka	3,756	83,008	22.1	2,910	61,401	21.1	2,803	58,025	20.7
Parry Sound	2,512	49,989	19.9	1,508	27,446	18.2	1,453	30,407	20.9
Nipissing	696	14,477	20.8				77	1,608	20.8
Algoma	5,245	122,209	23.3	5,174	130,902	25.3	3,841	97,579	25.4
Totals	12,209	269,683	22.1	9,592	219,749	22.9	8,174	187,619	23.0
The Province	781,206	15,389,313	19.7	708,068	13,509,237	19.1	659,685	13,418,124	20.3

AREA AND PRODUCE—CORN.

TABLE XIV. Showing by County Municipalities and groups of Counties the area and produce of Corn in Ontario in the years 1889 and 1890, with the yearly average for the eight years 1882-90 (1883 not included); also the yield per acre.

Counties.	1890.			1889.			Yearly average for the eight years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	38,436	2,863,482	74.5	27,893	1,107,352	39.7	31,612	2,306,093	72.9
Kent	27,596	2,011,748	72.9	23,717	1,100,469	46.4	25,927	1,820,160	70.2
Elgin	13,313	812,093	61.0	12,503	642,654	51.4	14,300	1,019,321	71.3
Norfolk	13,027	648,745	49.8	12,884	663,526	51.5	13,905	871,013	62.6
Haldimand	1,916	91,585	47.8	2,582	125,227	48.5	1,949	125,613	64.4
Welland	5,626	268,360	47.7	5,705	260,148	45.6	6,155	374,508	60.8
Totals	99,914	6,696,013	67.0	85,284	3,899,376	45.7	93,848	6,516,708	69.4
Lambton	9,220	566,108	61.4	6,936	255,938	36.9	7,417	445,448	60.1
Huron	2,538	148,727	58.6	1,890	94,500	50.0	1,685	114,228	67.8
Bruce	1,832	78,776	43.0	1,051	52,550	50.0	729	37,796	51.8
Totals	13,590	793,611	58.4	9,877	402,988	40.8	9,831	597,472	60.8
Grey	2,004	100,200	50.0	962	36,556	38.0	677	32,743	48.4
Simcoe	1,342	81,862	61.0	1,041	59,858	57.5	862	48,907	56.7
Totals	3,346	182,062	54.4	2,003	96,414	48.1	1,539	81,650	53.1
Middlesex	12,935	811,025	62.7	10,815	509,387	47.1	10,977	727,444	66.3
Oxford	10,775	633,570	58.8	8,557	365,384	42.7	8,760	537,837	61.4
Brant	4,938	357,017	72.3	5,310	318,600	60.0	4,784	329,434	68.9
Perth	1,671	91,905	55.0	952	33,320	35.0	844	51,988	61.6
Wellington	1,551	93,060	60.0	829	41,450	50.0	695	40,941	58.9
Waterloo	1,494	94,570	63.3	1,074	64,440	60.0	1,284	83,015	64.7
Dufferin	226	11,300	50.0	120	6,000	50.0	92	4,768	51.8
Totals	33,590	2,092,447	62.3	27,657	1,338,581	48.4	27,436	1,775,427	64.7
Lincoln	5,970	257,307	43.1	6,562	297,259	45.3	6,247	387,316	62.0
Wentworth	5,214	333,696	64.0	4,380	268,932	61.4	4,504	323,004	71.7
Halton	1,803	129,275	71.7	1,660	99,600	60.0	1,241	76,632	61.8
Peel	1,121	67,260	60.0	1,038	84,078	81.0	601	37,062	61.7
York	2,727	163,620	60.0	1,797	105,664	58.8	1,559	100,245	64.3
Ontario	3,198	170,453	53.3	3,263	154,993	47.5	2,653	153,139	57.7
Durham	2,191	113,275	51.7	2,158	135,954	63.0	1,901	98,749	51.9
Northumberland	5,128	265,118	51.7	4,869	258,057	53.0	4,074	215,480	52 9
Prince Edward	7,340	448,474	61.1	6,115	328,987	53.8	5,999	298,064	49.7
Totals	34,692	1,948,478	56.2	31,842	1,733,524	54.4	28,779	1,689,691	58.7
Lennox and Addington	2,706	150,183	55.5	2,660	187,530	70.5	2,329	125,161	53.7
Frontenac	2,459	135,245	55.0	2,045	104,500	51.1	1,805	93,941	52.0
Leeds and Grenville	9,442	626,949	66.4	7,028	499,691	71.1	5,895	375,457	63.7
Dundas	2,233	131,524	58.9	2,261	104,006	46.0	1,729	108,732	62.9
Stormont	1,689	126,675	75.0	1,152	69,811	60.6	1,289	75,425	58.5
Glengarry	2,047	151,069	73.8	806	52,390	65.0	885	47,989	54.2
Prescott	1,268	95,354	75.2	1,279	78,147	61.1	1,312	72,981	55.6
Russell	752	43,842	58.3	433	19,485	45.0	453	21,360	47.2
Carleton	3,350	169,175	50.5	1,914	102,590	53.6	1,598	78,672	49.2
Renfrew	790	35,550	45.0	454	22,337	49.2	490	24,706	50.4
Lanark	2,028	126,750	62.5	1,647	86,468	52.5	1,410	70,163	49.8
Totals	28,764	1,792,316	62.3	21,679	1,326,955	61.2	19,195	1,094,587	57.0
Victoria	726	43,560	60.0	930	62,775	67.5	584	37,775	64.7
Peterborough	758	39,795	52.5	423	19,035	45.0	408	19,737	48.4
Haliburton	147	5,880	40.0	68	4,760	70.0	112	5,454	48.7
Hastings	7,918	402,234	50.8	6,983	347,055	49.7	5,875	293,896	50.0
Totals	9,549	491,469	51.5	8,404	433,625	51.6	6,979	356,862	51.1
Muskoka	234	8,564	36.6	200	10,000	50.0	208	7,949	38.2
Parry Sound	56	2,240	40.0	32	1,216	38.0	36	1,557	43.3
Nipissing	35	1,341	38.3	.....	.....	.....	4	168	38.3
Algoma	66	2,640	40.0	138	5,520	40.0	77	3,450	44.8
Totals	391	14,785	37.8	370	16,736	45.2	325	13,124	40.4
The Province	223,836	14,011,181	62.6	187,116	9,248,199	49.4	187,932	12,125,521	64.5

AREA AND PRODUCE—BUCKWHEAT.

TABLE XV. Showing by County Municipalities and groups of Counties the area and produce of Buckwheat in Ontario in the years 1889 and 1890, with the yearly average for the eight years 1882-90 (1883 not included); also the yield per acre.

Counties.	1890.			1889.			Yearly average for the eight years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	934	17,092	18.3	659	9,556	14.5	639	14,773	23.1
Kent	1,361	29,534	21.7	724	11,222	15.5	886	19,132	21.6
Elgin	2,051	43,891	21.4	1,105	26,520	24.0	1,329	27,820	20.9
Norfolk	5,402	113,442	21.0	3,791	71,650	18.9	4,699	93,095	19.8
Haldimand	427	9,736	22.8	872	17,091	19.6	717	13,607	19.0
Welland	1,854	39,676	21.4	1,622	28,061	17.3	1,736	33,624	19.4
Totals	12,029	253,371	21.1	8,773	164,100	18.7	10,006	202,051	20.2
Lambton	1,103	17,097	15.5	350	5,880	16.8	483	9,612	19.9
Huron	456	9,120	20.0	136	2,448	18.0	265	4,994	18.8
Bruce	860	12,040	14.0	234	4,680	20.0	382	6,450	16.9
Totals	2,419	38,257	15.8	720	13,008	18.1	1,130	21,056	18.6
Grey	603	11,276	18.7	247	3,458	14.0	353	6,293	17.8
Simcoe	919	16,818	18.3	217	4,123	19.0	393	6,669	17.0
Totals	1,522	28,094	18.5	464	7,581	16.3	746	12,962	17.4
Middlesex	376	7,595	20.2	485	8,730	18.0	530	9,560	18.0
Oxford	933	15,861	17.0	461	8,436	18.3	638	12,110	19.0
Brant	790	15,326	19.4	495	9,257	18.7	670	13,411	20.0
Perth	86	2,150	25.0	63	1,285	20.4	108	2,252	20.9
Wellington	582	14,550	25.0	121	3,025	25.0	184	4,361	23.7
Waterloo	144	2,880	20.0	46	552	12.0	94	1,893	20.1
Dufferin	79	1,580	20.0	72	1,188	16.5	98	1,903	19.4
Totals	2,990	59,942	20.0	1,743	32,473	18.6	2,322	45,490	19.6
Lincoln	846	19,458	23.0	527	9,697	18.4	671	15,940	23.8
Wentworth	1,331	26,487	19,9	582	8,963	15.4	757	16,374	21.6
Halton	65	1,300	20.0	220	3,476	15.8	163	2,606	16.0
Peel	148	3,700	25.0	381	6,706	17.6	248	4,497	18.1
York	182	2,548	14.0	196	3,920	20.0	253	5,305	21.0
Ontario	1,238	26,369	21.3	474	14,220	30.0	505	11,827	23.4
Durham	3,995	86,692	21.7	1,874	40,104	21.4	1,554	33,618	21.6
Northumberland	11,038	231,798	21.0	6,679	140,927	21.1	6,083	127,941	21.0
Prince Edward	8,437	207,550	24.6	6,681	116,918	17.5	6,810	155,750	22.9
Totals	27,280	605,902	22.2	17,614	344,931	19.6	17,044	373,858	21.9
Lennox and Addington	5,672	145,770	25.7	2,035	67,969	33.4	2,950	74,303	25.2
Frontenac	2,099	55,414	26.4	1,251	34,903	27.9	1,568	38,193	24.4
Leeds and Grenville	7,078	174,827	24.7	5,156	124,260	24.1	5,471	126,266	23.1
Dundas	2,420	74,294	30.7	1,506	38,704	25.7	1,585	43,927	27.7
Stormont	2,346	66,392	28.3	1,434	37,141	25.9	2,013	53,718	26.7
Glengarry	1,580	35,392	22.4	1,196	26,910	22.5	1,070	25,576	23.9
Prescott	1,762	33,830	19.2	1,022	27,696	27.1	1,532	32,965	21.5
Russell	1,373	35,149	25.6	616	18,911	30.7	966	23,365	24.2
Carleton	2,850	63,840	22.4	3,443	109,487	31.8	3,683	81,188	22.0
Renfrew	1,391	32,132	23.1	720	15,120	21.0	1,102	25,032	22.7
Lanark	4,917	108,666	22 1	3,770	95,758	25.4	5,390	125,079	23.2
Totals	33,488	825,706	24.7	22,149	596,859	26.9	27,330	649,612	23.8
Victoria	1,897	43,062	22.7	478	14,149	29.6	602	11,868	19.7
Peterborough	1,947	50,817	26.1	461	12,032	26.1	827	18,526	22.4
Haliburton	340	8,772	25.8	173	3,633	21.0	242	4,104	17.0
Hastings	5,218	116,361	22.3	3,457	75,017	21.7	3,828	89,210	23.3
Totals	9,402	219,012	23.3	4,569	104,831	22.9	5,499	123,708	22.5
Muskoka	548	12,549	22.9	269	6,725	25.0	318	8,266	26.0
Parry Sound	198	5,702	28.8	13	390	30.0	101	2,520	25.0
Nipissing	85	2,185	25.7	.....	.....	.....	11	273	25.7
Algoma	150	3,000	20.0	84	1,680	20.0	70	1,562	22.3
Totals	981	23,436	23.9	366	8,795	24.0	500	12,621	25.2
The Province	90,111	2,053,720	22.8	56,398	1,272,578	22.6	64,577	1,441,358	22.3

AREA AND PRODUCE—BEANS.

TABLE XVI. Showing by County Municipalities and groups of Counties the area and produce of Beans in Ontario in the years 1889 and 1890, with the yearly average for the eight years 1882-90 (1883 not included); also the yield per acre.

Counties.	1890.			1889.			Yearly average for the eight years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	887	18,893	21.3	412	7,004	17.0	499	11,677	23.4
Kent	24,981	492,126	19.7	12,842	191,346	14.9	13,377	257,785	19.3
Elgin	2,599	49,901	19.2	890	18,868	21.2	1,223	26,044	21.3
Norfolk	378	6,124	16.2	234	5,850	25.0	540	10,242	19.0
Haldimand	323	4,942	15.3	208	2.870	13 8	173	3,223	18.6
Welland	1,155	13,860	12.0	483	6,424	13.3	710	10,738	15.1
Totals	30,323	585,846	19.3	15,069	232,362	15.4	16,522	319,709	19.4
Lambton	468	5,803	12.4	263	4,077	15.5	356	6,689	18.8
Huron	111	2,775	25.0	133	2,660	20.0	115	3,047	26.5
Bruce	150	2,700	18.0	77	1,925	25.0	106	2,047	19.3
Totals	729	11,278	15.5	473	8,662	18.3	577	11,783	20.4
Grey	351	7,020	20.0	79	1,580	20.0	135	2,391	17.7
Simcoe	78	1,404	18.0	136	2,720	20.0	105	2,035	19.4
Totals	429	8,424	19.6	215	4,300	20.0	240	4,426	18.4
Middlesex	322	6,118	19.0	271	4,770	17.6	312	5,972	19.1
Oxford	188	3,102	16.5	224	4,480	20.0	217	5,715	26.3
Brant	269	5,003	18.6	42	685	16.3	394	7,155	18.2
Perth	10	250	25.0	59	1,440	24.4	54	1,330	24.6
Wellington	39	780	20.0	49	980	20.0	38	733	19.3
Waterloo	61	1,220	20 0	29	522	18.0	37	767	20.7
Dufferin	28	560	20.0	21	420	20.0	19	411	21.6
Totals	917	17,033	18.6	695	13,297	19.1	1,071	22,083	20.6
Lincoln	262	5,240	20.0	160	3,040	19.0	166	3,469	20.9
Wentworth	541	8,927	16.5	94	,115	22.5	173	3,392	19.6
Halton	17	298	17.5	42	840	20.0	39	754	19.3
Peel	24	420	17.5	49	1,225	25.0	54	1,329	24.6
York	79	1,975	25.0	136	2,584	19.0	129	3,378	26.2
Ontario	244	4,221	17.3	90	1,575	17.5	238	5,289	22.2
Durham	392	7,174	18.3	287	3,918	13.7	316	6.147	19.5
Northumberland	534	9,623	16.2	487	8,425	17.3	513	10,814	21.1
Prince Edward	377	6,861	18.2	396	8,910	22.5	456	9,499	20.8
Totals	2,530	44,739	17.7	1,741	32,632	18.7	2,084	44,071	21.1
Lennox and Addington	239	5,091	21.3	79	2,275	28.8	164	3,255	19.8
Frontenac	136	2,530	18.6	237	4,930	20.8	288	7,441	25.8
Leeds and Grenville	565	11,583	20.5	325	5,590	17.2	385	8,337	21.7
Dundas	228	5,700	25.0	406	11,043	27.2	254	6,185	24.4
Stormont	194	4,171	21.5	268	6.030	22.5	180	4,456	24.8
Glengarry	232	4,640	20.0	66	1,485	22.5	103	2,612	25.4
Prescott	365	6,388	17.5	496	10,218	20.6	481	12.849	26.7
Russell	197	3,546	18.0	97	1,843	19.0	199	4,379	22.0
Carleton	600	13,800	23.0	395	8,888	22.5	463	10,328	22.3
Renfrew	626	12,395	19.8	425	12,368	29.1	470	11,058	23.5
Lanark	278	5,365	19.3	205	5,986	29.2	220	5,281	24.0
Totals	3,660	75,209	20.5	2,999	70,656	23.6	3,207	76,181	23.8
Victoria	122	2,843	23.3	61	1,220	20.0	85	1,695	19.9
Peterborough	282	5,640	20.0	46	690	15.0	142	2,338	16.5
Haliburton	26	520	20.0	22	550	25.0	25	493	19.7
Hastings	327	7,488	22.9	404	5,454	13.5	304	6,222	20.5
Totals	757	16,491	21.8	533	7,914	14.8	556	10,748	19.3
Muskoka	37	833	22.5	59	1,180	20.0	42	875	20.8
Parry Sound	41	820	20.0	10	170	17.0	16	339	21.2
Nipissing	11	228	20.7	....	.....	..	1	29	20.7
Algoma	22	440	20.0	36	720	20.0	15	297	19.8
Totals	111	2,321	20.9	105	2,070	19.7	74	1,540	20.8
The Province	39.456	761,341	19.3	21,830	371,893	17.0	24,331	490,541	20.2

AREA AND PRODUCE—HAY AND CLOVER.

TABLE XVII. Showing by County Municipalities and groups of Counties the area and produce of Hay and Clover in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.
Essex	39,980	69,565	1.74	40,911	76,913	1.88	36,366	58,200	1.60
Kent	53,422	105,776	1.98	56,631	102,502	1.81	51,379	80,625	1.57
Elgin	54,527	104,147	1.91	53,624	106,176	1.98	49,790	77,099	1.55
Norfolk	42,532	72,730	1.71	40,804	67,735	1.66	40,417	55,873	1.38
Haldimand	48,325	81,669	1.69	50,579	70,811	1.40	49,229	65,762	1.34
Welland	47,790	91,757	1.92	54,047	84,313	1.56	46,851	65,464	1.40
Totals	286,576	525,644	1.83	296,596	508,450	1.71	274,032	403,023	1.47
Lambton	59,278	105,515	1.78	58,919	97,806	1.66	53,591	79,976	1.49
Huron	110,221	209,420	1.90	103,376	165,402	1.60	95,212	138,793	1.46
Bruce	101,149	169,930	1.68	94,852	136,587	1.44	84,391	111,492	1.32
Totals	270,648	484,865	1.79	257,147	399,795	1.55	233,194	330,261	1.42
Grey	126,129	239,645	1.90	126,244	181,791	1.44	115,454	147,833	1.28
Simcoe	83,666	135,957	1.63	85,031	127,547	1.50	76,043	103,638	1.36
Totals	209,795	375,602	1.79	211,275	309,338	1.46	191,497	251,471	1.31
Middlesex	93,878	189,634	2.02	94,609	164,620	1.74	89,168	139,721	1.57
Oxford	66,180	144,272	2.18	62,222	106,400	1.71	62,086	97,995	1.58
Brant	32,782	75,071	2.29	29,601	52,394	1 77	31,685	47,918	1.51
Perth	72,403	159,287	2.20	69,277	110,843	1.60	67,084	106,107	1.58
Wellington	90,500	181,000	2.00	86,251	131,102	1.52	82,738	128,609	1.55
Waterloo	43,690	85,632	1.96	40,874	62,537	1.53	42,327	67,297	1.59
Dufferin	34,205	62,595	1.83	36,528	54,061	1.48	33,183	45,334	1.37
Totals	433,638	897,491	2.07	419,362	681,957	1.63	408,271	632,981	1.55
Lincoln	38,797	77,594	2.00	42,595	65,170	1.53	40,788	56,289	1.38
Wentworth	41,830	94,954	2.27	44,837	74,878	1.67	44,484	67,198	1.51
Halton	30,525	53,419	1.75	32,725	50,397	1.54	33,256	46,537	1.40
Peel	35,884	66,385	1.85	38,048	58,213	1.53	37,353	55,043	1.47
York	71,658	126,835	1.77	70,636	111,605	1.58	71,355	101,501	1.42
Ontario	59,897	106,617	1.78	52,742	85,969	1.63	52,762	76,958	1.46
Durham	46,882	89,545	1.91	40,664	68,316	1.68	43,353	62,971	1.45
Northumberland	58,566	92,534	1.58	53,635	82,062	1.53	53,212	69,638	1.31
Prince Edward	33,602	53,091	1.58	28,755	52,622	1.83	29,634	40,602	1.37
Totals	417,641	760,974	1.82	404,637	649,232	1.60	406,197	576,737	1.42
Lennox and Addington	63,769	95,654	1.50	54,238	78,103	1.44	48,407	59,910	1.24
Frontenac	65,478	110,003	1.68	65,369	101,976	1.56	61,819	76,304	1.23
Leeds and Grenville	119,216	180,016	1.51	115,716	192,088	1.66	110,492	148,308	1.34
Dundas	40,071	60,107	1.50	38,294	65,866	1.72	35,018	54,682	1 56
Stormont	37,332	51,518	1.38	36,585	68,048	1.86	32,372	50,150	1.55
Glengarry	40,757	54,343	1.33	44,309	85,073	1.92	36,262	58,905	1.62
Prescott	43,525	63,982	1.47	35,575	54,786	1.54	32,453	46,824	1.44
Russell	20,835	28,127	1.35	16,879	23,631	1.40	17,883	23,869	1.33
Carleton	65,046	83,909	1.29	58,654	76,837	1.31	58,492	78,324	1.34
Renfrew	63,443	84,591	1.33	67,431	78,894	1.17	61,868	68,172	1.10
Lanark	58,962	83,726	1.42	62,619	93,302	1.49	59,134	81,721	1.38
Totals	618,434	895,976	1.45	595,669	918,604	1.54	554,200	747,169	1.35
Victoria	42,687	61,042	1.43	37,812	50,290	1.33	37,746	45,446	1.20
Peterborough	40,151	65,446	1.63	36,941	49,870	1.35	37,830	44,595	1.18
Haliburton	10,196	11,895	1.17	10,645	10,432	.98	9,929	10,514	1.06
Hastings	75,547	129,185	1.71	71,733	96,122	1.34	67,583	87,733	1.30
Totals	168,581	267,568	1.59	157,131	206,714	1.32	153,088	188,288	1.23
Muskoka	22,417	41,471	1.85	22,018	24,220	1.10	20,630	25,796	1.25
Parry Sound	14,580	21,870	1.50	10,587	13,128	1.24	9,695	11,183	1.15
Nipissing	4,703	8,223	1.75	.....	.....	.....	523	914	1.75
Algoma	14,989	26,231	1.75	11,801	16,875	1.43	10,337	13,791	1.33
Totals	56,689	97,795	1.73	44,406	54,223	1.22	41,185	51,684	1.25
The Province	2,462,002	4,305,915	1.75	2,386,223	3,728,313	1.56	2,261,664	3,181,614	1.40

AREA AND PRODUCE—POTATOES.

TABLE XVIII. Showing by County Municipalities and groups of Counties the area and produce of Potatoes in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	2,600	206,440	79.4	2,470	130,910	53.0	2,769	284,049	102.6
Kent	3,013	290,755	96.5	2,588	207,040	80.0	3,302	412,520	124.9
Elgin	2,646	222,793	84.2	2,225	151,968	68.3	2,812	281,306	100.0
Norfolk	2,807	200,701	71.5	2,749	145,422	52.9	3,369	340,115	101.0
Haldimand	1,320	92,928	70.4	1,309	76,184	58.2	1,480	160,727	108.6
Welland	2,254	143,129	63.5	1,954	125,447	64.2	2,366	221,435	93.6
Totals	14,640	1,156,746	79.0	13,295	836,971	63.0	16,098	1,700,152	105.6
Lambton	3,130	254,156	81.2	2,425	136,285	56.2	2,975	300,792	101.1
Huron	4,943	538.274	118.0	4,631	470,973	101.7	5,062	606,804	119.9
Bruce	4,633	529,089	114.2	4,366	441,403	101.1	4,745	544,206	114.7
Totals	12,706	1,321,519	104.0	11,422	1,048,661	91.8	12,782	1,451,802	113.6
Grey	6,815	1,089,037	159.8	6,304	650,573	103.2	6,881	877,791	127.6
Simcoe	7,396	982,928	132.9	6,670	747,040	112.0	6,806	869,693	127.8
Totals	14,211	2,071,965	145.8	12,974	1,397,613	107.7	13,687	1,747,484	127.7
Middlesex	6,078	577,410	95.0	4,400	259,600	59.0	5,607	586,892	104.7
Oxford	3.149	284,355	90.3	2,830	208,854	73.8	3,274	354,850	108.4
Brant	2,173	236,857	109.0	2,150	161,250	75.0	2,215	244,482	110.4
Perth	3,403	439,668	129.2	3,146	184,356	58.6	3,720	421,561	113.3
Wellington	6,203	825,619	133.1	5,403	613,781	113.6	5,904	722,078	122.3
Waterloo	2,896	351,285	121.3	2,641	218,411	82.7	2,898	349,900	120.7
Dufferin	3,919	540,038	137.8	2,658	311,783	117.3	3,128	439,378	140.5
Totals	27,821	3,255,232	117.0	23,228	1,958,035	84 3	26,746	3,119,141	116.6
Lincoln	1,747	140,109	80.2	1,605	100,313	62.5	1,905	184,860	97.0
Wentworth	4,219	391,945	92.9	3,007	236,050	78.5	3,571	416,744	116.7
Halton	1,532	146,766	95.8	1,384	123,591	89 3	1,599	179,247	112.1
Peel	3,218	276,104	85.8	2,974	235,541	79.2	2,915	305,811	104.9
York	8,244	867,269	105.2	7,387	785,238	106.3	7,624	799,036	104.8
Ontario	4,492	457,286	101.8	4,453	504,970	113.4	4,144	516,278	124.6
Durham	3,195	313,430	98.1	2,982	381,994	128.1	3,147	395,158	125.6
Northumberland	4,699	476,949	101.5	4,417	410,339	92.9	4,337	466,271	107.5
Prince Edward	2,324	181,737	78.2	2,336	150,906	64.6	2,414	223,078	92.4
Totals	33,670	3,251,595	96.6	30,545	2,928,942	95.9	31,656	3,486,483	110.1
Lennox and Addington	3,081	265,890	86.3	2,796	316,787	113.3	3,236	364,376	112.6
Frontenac	4,299	361,116	84.0	4,023	259,081	64.4	4,047	397,465	98.2
Leeds and Grenville	7,391	753,143	101.9	7,323	496,499	67.8	7,293	849,643	116.5
Dundas	2,216	365,649	165.0	2,341	166,913	71.3	2,417	341,925	141.5
Stormont	1,985	218,350	110.0	1,838	87,305	47.5	2,043	245,313	120.1
Glengarry	2,275	251,843	110.7	2,277	100,188	44.0	2,438	277,050	113.6
Prescott	2,195	358,005	163.1	2,309	221,664	96.0	2,377	311,556	131.1
Russell	1,434	176,382	123.0	1,401	128,472	91.7	1,495	153,818	102.9
Carleton	6,309	808,814	128.2	6,475	903,910	139.6	6,073	801,847	132.0
Renfrew	3,814	497,346	130.4	3,790	720,100	190.0	3,771	570,710	151.3
Lanark	3,336	421,337	126.3	3,365	469,418	139.5	3,547	498,007	140.4
Totals	38,335	4,477,866	116.8	37,938	3,870,337	102.0	38,737	4,811,710	124.2
Victoria	3,490	484,761	138.9	3,767	541,695	143.8	3,157	412,493	130.7
Peterborough	3,190	351,857	110.3	2,915	434,044	148.9	2,688	321,824	119.7
Haliburton	720	87,840	122.0	654	87,505	133.8	684	91,447	133.7
Hastings	5,311	517,823	97.5	5,889	717,869	121.9	5,781	685,359	118.6
Totals	12,711	1,442,281	113.5	13,225	1,781,113	134.7	12,310	1,511,123	122.8
Muskoka	1,395	176,886	126.8	1,545	253,844	164.3	1,354	184,311	136.1
Parry Sound	1,107	159,962	144.5	863	136,268	157.9	763	115,305	151.1
Nipissing	431	60,340	140.0	.....	.....	.....	48	6.704	140.0
Algoma	1,067	186,725	175.0	777	143,745	185.0	738	127,001	172.1
Totals	4,000	583,913	146.0	3,185	533,857	167.6	2,903	433,321	149.3
The Province	158,094	17,561,117	111.1	145,812	14,355,529	98.5	154,919	18,261,216	117.9

AREA AND PRODUCE—MANGEL-WURZELS.

TABLE XIX. Showing by County Municipalities and groups of Counties the area and produce of Mangel-wurzels in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	219	128,334	586	186	29,388	158	196	79,456	405
Kent	471	220,428	468	324	96,228	297	300	121,319	404
Elgin	345	133,170	386	322	104,650	325	287	111,790	390
Norfolk	248	90,024	363	311	101,075	325	215	81,901	381
Haldimand	208	86,320	415	300	79,200	264	174	58,415	336
Welland	116	43,036	371	223	80,949	363	151	61,249	406
Totals	1,607	701,312	436	1,666	491,490	295	1,323	514,130	389
Lambton	445	194,465	437	512	125,440	245	394	152,889	388
Huron	2,155	1,038,710	482	1,742	698,542	401	1,552	697,853	450
Bruce	770	329,560	428	384	121,344	316	448	186,242	416
Totals	3,370	1,562,735	464	2,638	945,326	358	2,394	1,036,984	433
Grey	646	260,338	403	308	116,732	379	378	166,527	441
Simcoe	583	237,281	407	462	204,666	443	629	252,760	402
Totals	1,229	497,619	405	770	321,398	417	1,007	419,287	416
Middlesex	1,758	812,196	462	1,622	496,332	306	1,374	577,949	421
Oxford	1,652	751,660	455	1,608	541,896	337	1,259	576,917	458
Brant	404	204,828	507	361	108,300	300	355	174,837	492
Perth	2,862	1,419,552	496	1,929	590,274	306	1,678	792,920	473
Wellington	1,433	654,881	457	1,103	349,651	317	950	414,444	436
Waterloo	697	286,467	411	511	80,738	158	489	205,509	420
Dufferin	140	73,500	525	89	32,930	370	124	49,956	403
Totals	8,946	4,203,084	470	7,223	2,200,121	305	6,229	2,792,532	448
Lincoln	203	89,726	442	317	112,218	354	244	92,953	381
Wentworth	585	283,725	485	448	120,512	269	448	217,775	486
Halton	577	259,650	450	447	165,390	370	436	199,670	458
Peel	446	182,414	409	626	183,418	293	455	176,737	388
York	1,925	866,250	450	1,914	692,868	362	1,755	795,510	453
Ontario	988	529,568	536	758	326,698	431	784	353,582	451
Durham	711	284,400	400	467	219,490	470	477	203,208	426
Northumberland	491	225,860	460	486	195,372	402	458	195,364	427
Prince Edward	101	35,350	350	131	20,960	160	124	35,512	286
Totals	6,027	2,756,943	457	5,594	2,036,926	364	5,181	2,270,311	438
Lennox and Addington	108	40,500	375	128	43,520	340	132	44,316	336
Frontenac	87	27,057	311	327	96,138	294	179	62,616	350
Leeds and Grenville	237	87,216	368	315	128,205	407	223	92,666	416
Dundas	81	26,730	330	80	15,520	194	103	39,736	386
Stormont	60	18,000	300	14	4,438	317	32	11,844	370
Glengarry	89	30,082	338	60	22,500	375	67	20,998	313
Prescott	202	84,234	417	117	37,089	317	86	31,900	371
Russell	243	106,920	440	49	22,050	450	73	26,058	357
Carleton	1,073	391,645	365	449	161,191	359	576	210,713	366
Renfrew	109	34,553	317	85	42,925	505	104	36,277	349
Lanark	158	75,524	478	111	45,843	413	140	55,913	399
Totals	2,447	922,461	377	1,735	619,419	357	1,715	633,037	369
Victoria	757	355,790	470	731	313,599	429	543	253,988	468
Peterborough	443	178,086	402	303	116,655	385	305	111,068	364
Haliburton	12	3,900	325	4	1,044	261	7	2,312	330
Hastings	1,064	395,808	372	475	159,125	335	382	123,148	322
Totals	2,276	933,584	410	1,513	590,423	390	1,237	490,516	397
Muskoka	40	13,480	337	38	11,400	300	50	12,986	260
Parry Sound	5	1,500	300	7	1,575	225	10	2,090	209
Nipissing	1	300	300	.....	.....	.....	0	33	300
Algoma	5	1,500	300	27	5,400	200	21	6,039	288
Totals	51	16,780	329	72	18,375	255	81	21,148	261
The Province	25,953	11,594,518	447	21,211	7,223,478	341	19,167	8,177,945	427

AREA AND PRODUCE—CARROTS.

TABLE XX. Showing by County Municipalities and groups of Counties the area and produce of Carrots in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882 90; also yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90		
	Acres.	Bushels.	Bush per acre.	Acres.	Bushels.	Bush per acre.	Acres.	Bushels.	Bush. per acre.
Essex	104	35,152	338	120	12,600	105	89	22,29[illegible]	250
Kent	232	74,936	323	164	31,652	193	154	43,61[illegible]	283
Elgin	222	79,254	357	174	52,722	303	155	47,51[illegible]	307
Norfolk	276	68,724	249	192	48,000	250	151	41,824	277
Haldimand	87	27,753	319	128	31,232	244	88	23,079	262
Welland	61	13,237	217	104	27,872	268	80	22,395	280
Totals	982	299,056	305	882	204,078	231	717	200,722	280
Lambton	265	87,980	332	253	60,467	239	197	58,318	296
Huron	422	160,782	381	503	157,439	313	500	193,897	388
Bruce	361	122,379	339	291	68,094	234	306	99,196	324
Totals	1,048	371,141	354	1,047	286,000	273	1,003	351,411	350
Grey	583	211,046	362	456	139,080	305	541	198,535	367
Simcoe	562	206,254	367	559	207,948	372	588	212,098	361
Totals	1,145	417,300	364	1,015	347,028	342	1,129	410,633	364
Middlesex	655	230,560	352	466	123,024	264	489	153,268	313
Oxford	354	126,732	358	449	150,864	336	355	140,383	395
Brant	196	88,592	452	220	61,380	279	213	89,064	418
Perth	494	194,636	394	379	83,759	221	425	163,354	384
Wellington	380	139,080	366	280	65,240	233	308	100,459	326
Waterloo	375	145,875	389	406	131,950	325	331	135,769	410
Dufferin	109	34,117	313	155	48,050	310	151	50,553	335
Totals	2,563	959,592	374	2,355	664,267	282	2,272	832,850	367
Lincoln	108	35,100	325	155	36,580	236	118	36,910	313
Wentworth	239	93,688	392	265	53,000	200	229	83,470	364
Halton	105	38,640	368	156	62,400	400	125	49,567	397
Peel	238	81,634	343	325	94,900	292	303	105,516	348
York	818	330,472	404	689	227,370	330	724	297,692	411
Ontario	482	209,670	435	465	177,165	381	512	198,715	388
Durham	575	186,300	324	582	243,276	418	512	188,834	369
Northumberland	288	103,392	359	394	141,446	359	276	93,855	340
Prince Edward	65	18,590	286	126	18,900	150	61	12,816	210
Totals	2,918	1,097,486	376	3,157	1,055,037	334	2,860	1,067,375	373
Lennox and Addington	59	21,417	363	67	20,770	310	59	16,717	283
Frontenac	126	24,066	191	259	58,534	226	167	40,385	242
Leeds and Grenville	293	90,830	310	188	60,160	320	172	53,810	313
Dundas	86	34,400	400	83	12,782	154	56	17,862	319
Stormont	36	9,000	250	81	24,300	300	43	11,531	268
Glengarry	36	9,000	250	64	13 312	208	43	10,196	237
Prescott	39	11,739	301	50	12,750	255	50	13,667	273
Russell	240	73,440	306	177	55,401	313	139	43,117	310
Carleton	978	303,180	310	565	174,020	308	581	187,531	323
Renfrew	83	32,204	388	90	27,450	305	103	31,453	305
Lanark	165	68,805	417	99	36,630	370	133	46,761	352
Totals	2,141	678,081	317	1,723	496,109	288	1,546	473,030	306
Victoria	281	91,606	326	375	152,250	406	301	110,222	366
Peterborough	432	177,984	412	330	112,530	341	337	108,037	320
Haliburton	25	8,500	340	23	4,623	201	20	6,002	300
Hastings	251	68,021	271	207	61,893	299	164	47,163	288
Totals	989	346,111	350	935	331,296	354	822	271,424	330
Muskoka	100	25,000	250	84	32,844	391	78	20,337	261
Parry Sound	57	9,975	175	25	5,800	232	29	7,114	245
Nipissing	10	2,000	200	.....	.....	....	1	222	200
Algoma	24	4,800	200	38	9,500	250	29	7,043	243
Totals	191	41,775	219	147	48,144	328	137	34,716	253
The Province	11,977	4,210,542	352	11,261	3,431,959	305	10,486	3,642,161	347

AREA AND PRODUCE—TURNIPS.

TABLE XXI. Showing by County Municipalities and groups of Counties the area and produce of Turnips in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the yield per acre.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	174	65,250	375	192	21,696	113	198	56,281	284
Kent	404	144,632	358	285	86,355	303	345	117,335	340
Elgin	402	140,700	350	396	113,256	286	356	119,967	337
Norfolk	1,306	428,368	328	1,570	436,460	278	991	365.525	369
Haldimand	84	29,400	350	266	69,160	260	119	33,892	285
Welland	209	50,787	243	187	52,173	279	172	56,789	330
Totals	2,579	859,137	333	2,896	779,100	269	2,181	749,789	344
Lambton	302	93,620	310	379	75,800	200	300	94,681	316
Huron	6,620	2,992,240	452	6,685	2,125,830	318	6,659	2,557,050	384
Bruce	5,714	2,445,592	428	5,884	1,776,968	302	5,592	2,173,833	389
Totals	12,636	5,531,452	438	12,948	3,978,598	307	12,551	4,825,564	384
Grey	9,794	4,044,922	413	9,165	2 932,800	320	8,974	3,541.531	395
Simcoe	3,551	1,633,460	460	3,873	1,603,422	414	3,348	1,345,969	402
Totals	13,345	5,678,382	426	13,038	4,536,222	348	12,322	4,887,500	397
Middlesex	1,822	624,946	343	1,860	446,400	240	1,697	603,644	356
Oxford	5,905	2,486,005	421	5,827	1,619,906	278	5,327	2,188,878	411
Brant	3383	1,502,052	444	3,401	870,656	256	2,702	1,187.486	439
Perth	4,687	2,001,349	427	3,792	963,168	254	4,630	1,739,720	376
Wellington	12,994	5,327,540	410	12,872	4,363,608	339	12,908	5,340,982	414
Waterloo	4,780	1,940.680	406	4,858	1,248,506	257	5,049	1,959,214	388
Dufferin	2,745	1,092,510	398	2,455	927,990	378	2,383	885,858	372
Totals	36,316	14,975,082	412	35,065	10,440,234	298	34,696	13,905,782	401
Lincoln	262	94,320	360	270	88,830	329	233	79,325	340
Wentworth	3,073	1,545,719	503	3,125	978,125	313	2,457	1,131,057	460
Halton	1,728	886,464	513	1,876	487,760	260	1,695	738,920	436
Peel	1,381	615,926	446	1,553	509,384	328	1,324	483,972	366
York	4,410	1,869,840	424	4,193	1,320,795	315	3,326	1,282,470	386
Ontario	12,803	6,276,410	490	12.657	5,062,800	400	11,705	4,688,911	401
Durham	5,224	2,173,184	416	5,538	2,159,820	390	5,125	2,149,557	419
Northumberland	3,524	1,585,800	450	3,651	1,577,232	432	3,148	1,216,578	386
Prince Edward	98	37,338	381	174	17,400	100	116	25,722	222
Totals	32,509	15,085,001	464	33,037	12,202,146	369	29,129	11,796,512	405
Lennox and Addington	96	25,632	267	97	21,825	225	150	35,803	239
Frontenac	255	67,320	264	528	120,384	228	378	102,222	270
Leeds and Grenville	393	141,087	359	321	109,461	341	258	91,978	357
Dundas	71	20,093	283	82	20,500	250	65	18,645	287
Stormont	141	53,580	380	64	16,000	250	91	23,726	261
Glengarry	44	23,100	525	23	5,175	225	36	13,065	363
Prescott	62	20,336	328	118	34,574	293	108	39,380	365
Russell	573	236,649	413	356	170,880	480	309	120,976	392
Carleton	2,520	957,600	380	1,675	624,775	273	1,536	534,780	348
Renfrew	726	241,758	333	639	247,932	388	600	191,508	319
Lanark	479	180,583	377	576	230,400	400	471	165,542	351
Totals	5,369	1,967,738	367	4,479	1,601,906	358	4,002	1,337,625	334
Victoria	3,386	1,185,100	350	3,975	1,462,800	368	3,279	1,214,236	370
Peterborough	1,649	659,600	400	1,569	660,549	421	1,207	416,477	345
Haliburton	275	84,425	307	343	109.760	320	313	86,243	276
Hastings	835	265.530	318	1,452	429,792	296	839	231,612	276
Totals	6,145	2,194,655	357	7,339	2,662,901	363	5,638	1,948,568	346
Muskoka	796	299,296	376	1,169	482,797	413	968	298,989	309
Parry Sound	740	209,420	283	574	211,806	369	607	187,526	309
Nipissing	112	33,600	300	.....	.....	.....	12	3,733	300
Algoma	517	206,800	400	558	125,550	225	489	165.007	337
Totals	2,165	749,116	346	2,301	820,153	356	2,076	655,255	316
The Province	111,055	47,040,563	424	111,103	37,021,260	333	102,595	40,106,595	391

RATIOS OF AVERAGE PRODUCTION.

TABLE XXII. Showing by County Municipalities and groups of Counties the per cent. ratios of total yields in 1890 to average of total yields for the nine years 1882-90.

Counties.	Fall wheat.	Spring wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Essex	70	155	205	91	91	103	124	116	162	120	73	162	158	116
Kent	83	266	115	77	203	94	111	154	191	131	70	182	172	123
Elgin	99	90	148	73	80	107	80	158	192	135	79	119	167	117
Norfolk	106	90	83	71	117	127	74	122	60	130	59	110	164	117
Haldimand	84	185	63	68	60	115	73	72	153	124	58	148	120	87
Welland	96	53	67	63	34	106	72	118	129	140	65	70	59	89
Group	89	171	101	75	109	111	103	125	183	130	68	136	149	115
Lambton	84	117	94	92	207	129	127	178	87	132	84	127	151	99
Huron	78	69	107	103	99	126	130	183	91	151	89	149	83	117
Bruce	79	112	88	112	229	125	208	187	132	152	97	177	123	113
Group	80	94	98	104	189	126	133	182	96	147	91	151	106	115
Grey	65	80	72	108	142	108	306	179	294	162	124	156	106	114
Simcoe	79	92	90	105	112	119	167	252	69	131	113	94	97	121
Group	74	86	82	106	118	112	223	217	190	149	119	119	102	116
Middlesex	97	54	107	91	171	113	111	79	102	136	98	141	150	104
Oxford	104	79	89	86	125	99	118	131	54	147	80	130	90	114
Brant	88	156	104	89	167	133	108	114	70	157	97	117	99	126
Perth	74	96	99	105	42	110	177	95	19	150	104	179	119	115
Wellington	47	125	92	112	72	108	227	334	106	141	114	158	138	100
Waterloo	87	67	119	98	109	127	114	152	159	127	100	139	107	99
Dufferin	47	127	102	105	41	129	237	83	136	138	123	147	67	123
Group	85	102	100	99	112	114	118	132	77	142	104	151	115	108
Lincoln	83	111	93	72	117	135	66	122	151	138	76	97	95	119
Wentworth	74	181	92	76	87	126	103	162	263	141	94	130	112	137
Halton	63	205	78	92	134	120	169	50	40	115	82	130	78	120
Peel	54	157	88	100	39	145	181	82	32	121	90	103	77	127
York	66	97	68	96	74	122	163	48	58	125	109	109	111	146
Ontario	44	68	65	88	48	88	111	223	80	139	89	150	106	134
Durham	125	65	53	79	75	91	115	258	117	142	79	140	99	101
Northumberland	115	83	57	97	102	120	123	181	89	133	102	116	110	130
Prince Edward	192	99	75	100	71	173	150	133	72	131	81	100	145	145
Group	72	88	69	90	80	118	115	162	102	132	93	121	103	128
Lennox and Addington	133	78	53	89	68	114	120	196	156	160	73	91	128	72
Frontenac	36	77	58	90	80	95	144	145	34	144	91	43	60	66
Leeds and Grenville	46	62	57	81	55	81	167	138	139	121	89	94	169	153
Dundas	23	66	56	73	35	88	121	169	92	110	107	67	193	108
Stormont	14	70	113	76	62	70	168	124	94	103	89	152	78	226
Glengarry	9	72	98	73	265	72	315	138	178	92	91	143	88	177
Prescott	61	95	138	97	17	81	131	103	50	137	115	264	86	52
Russell	16	72	139	111	212	106	205	150	81	118	115	410	170	196
Carleton	70	73	100	87	76	84	215	79	134	107	101	186	162	179
Renfrew	50	82	90	90	118	111	144	128	112	124	87	95	102	126
Lanark	47	69	99	96	60	96	181	87	102	102	85	135	147	109
Group	54	75	68	86	78	95	164	127	99	120	93	146	143	147
Victoria	28	96	73	98	149	116	115	363	168	134	118	140	83	98
Peterborough	67	98	50	94	162	124	202	274	241	147	109	160	165	158
Haliburton	177	121	94	111	150	132	198	214	105	113	96	169	142	98
Hastings	127	54	54	91	80	136	137	130	120	147	76	321	144	115
Group	76	88	61	95	101	126	138	177	153	142	95	190	128	113
Muskoka	43	82	99	109	85	143	108	152	95	161	96	104	123	100
Parry Sound	255	59	109	132	55	164	144	226	242	196	139	72	140	112
Nipissing	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Algoma	157	66	101	117	140	125	77	192	148	190	147	25	68	125
Group	154	69	112	125	93	144	113	186	151	189	135	79	120	114
The Province	81	89	79	93	90	115	116	142	155	135	96	142	116	117

RATIOS OF AVERAGE YIELD PER ACRE.

TABLE XXIII. Showing by County Municipalities and groups of Counties the per cent. ratios of average yields per acre in 1890 to average yields per acre for the nine years 1882-90.

Counties.	Fall wheat.	Spring wheat	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Essex	84	89	87	68	84	95	102	79	91	109	77	145	135	132
Kent	102	92	89	72	101	79	104	100	102	126	77	116	114	105
Elgin	110	106	88	69	94	73	86	102	90	123	84	99	116	104
Norfolk	113	96	84	68	93	84	80	106	85	124	71	95	90	89
Haldimand	93	83	70	61	86	86	74	120	82	126	65	124	122	123
Welland	106	85	71	57	87	74	78	110	79	137	68	91	78	74
Group	102	90	83	67	93	81	97	104	99	124	75	112	109	97
Lambton	96	103	81	70	112	82	102	78	66	119	80	113	112	98
Huron	112	121	92	86	87	92	86	106	94	130	98	107	98	118
Bruce	113	109	101	93	109	108	83	83	93	127	100	103	105	110
Group	108	112	91	84	106	97	96	85	76	126	92	107	101	114
Grey	92	96	103	94	79	102	103	105	113	148	125	91	99	105
Simcoe	88	87	92	89	87	101	108	108	93	120	104	101	102	114
Group	90	91	96	92	85	101	102	106	107	137	114	97	100	107
Middlesex	115	114	93	80	100	86	95	112	99	129	91	110	112	96
Oxford	118	102	92	78	103	76	96	89	63	138	83	99	91	102
Brant	118	122	90	79	113	99	105	97	102	152	99	103	108	101
Perth	110	118	95	88	101	88	89	120	102	139	114	105	103	114
Wellington	96	121	97	89	96	94	102	105	104	129	109	105	112	99
Waterloo	104	113	97	80	101	94	98	100	97	123	100	98	95	105
Dufferin	95	106	98	78	82	100	97	103	93	134	98	130	93	107
Group	112	112	95	83	101	90	96	102	90	134	100	105	102	103
Lincoln	97	80	78	63	84	87	70	97	96	145	83	116	104	106
Wentworth	93	96	79	72	89	98	89	92	84	150	80	100	108	109
Halton	83	92	86	78	81	93	116	125	91	125	85	98	93	118
Peel	85	93	85	81	85	101	97	138	71	126	82	105	99	122
York	97	77	76	80	114	97	93	67	95	125	100	99	98	110
Ontario	96	63	74	79	82	83	92	91	78	122	82	119	112	122
Durham	108	66	65	73	93	88	100	100	94	132	78	94	88	99
Northumberland	100	79	79	85	94	119	98	100	77	121	94	108	106	117
Prince Edward	128	94	95	94	100	124	123	107	88	115	85	122	136	172
Group	94	75	79	79	93	98	96	101	84	128	88	104	101	115
Lennox and Addington	108	72	79	79	97	102	103	102	108	121	77	112	128	112
Frontenac	83	71	83	83	87	101	106	108	72	137	86	89	79	98
Leeds and Grenville	83	62	74	73	80	93	104	107	94	113	87	88	99	101
Dundas	84	71	70	72	95	116	94	111	102	96	117	85	125	99
Stormont	66	78	83	82	85	108	128	106	87	89	92	81	93	146
Glengarry	76	71	89	73	90	102	136	94	79	82	97	108	105	145
Prescott	97	86	84	83	79	109	135	89	66	102	124	112	110	90
Russell	90	81	96	92	106	98	124	106	82	102	120	123	99	105
Carleton	128	64	86	83	100	107	103	102	103	96	97	100	96	109
Renfrew	107	75	78	85	88	108	89	102	84	121	86	91	127	104
Lanark	67	62	82	87	82	96	126	95	80	103	90	120	118	107
Group	90	70	82	80	90	104	109	104	86	107	94	102	104	110
Victoria	78	87	88	91	101	108	93	115	117	119	106	100	89	95
Peterborough	82	87	83	89	92	116	108	117	121	138	92	110	129	116
Haliburton	88	85	86	98	97	101	82	152	102	110	91	98	113	111
Hastings	97	77	78	88	105	122	102	96	112	132	82	116	94	115
Group	89	85	84	90	100	115	101	104	113	129	92	103	106	103
Muskoka	87	93	93	92	89	107	96	88	108	148	93	130	96	122
Parry Sound	78	72	96	86	115	95	92	115	94	130	96	144	71	92
Nipissing	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Algoma	99	82	82	77	100	92	89	90	101	132	102	104	82	119
Group	94	82	91	87	96	96	94	95	100	138	98	126	87	109
The Province	102	84	86	81	94	97	97	102	96	125	94	105	101	108

ACREAGE UNDER CROP; ALSO PASTURE AND ORCHARD.

TABLE XXIV. Showing by County Municipalities and groups of Counties in Ontario the total area under crop enumerated in Tables VIII—XXI, for the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the area in Pasture and in Orchard and Garden for the same period.

Counties.	Acres in crop.			Pasture.		Orchard and garden.		
	1890.	1889.	1882-90.	1890.	1889.	1890.	1889.	1882-90.
Essex	165,950	145,522	143,228	30,784	28,500	6,050	6,210	5,997
Kent	228,010	217,670	209,321	47,661	47,721	7,294	7,356	7,407
Elgin	179,476	167,292	167,391	68,604	68,386	7,031	7,228	7,024
Norfolk	165,103	156,817	154,941	39,299	43,153	7,626	8,078	7,766
Haldimand	146,604	147,924	141,934	35,488	35,715	4,446	4,391	4,547
Welland	111,812	114,634	110,687	24,271	26,148	7,070	6,436	6,804
Totals	996,955	949,859	927,502	246,107	249,623	39,517	39,699	39,545
Lambton	200,371	182,334	172,841	74,054	65,999	7,205	6,718	6,310
Huron	354,703	340,239	332,629	154,177	146,741	8,652	8,613	8,455
Bruce	296,860	290,184	275,264	111,753	106,688	5,743	5,774	5,694
Totals	851,934	812,757	780,734	339,984	319,428	21,600	21,105	20,459
Grey	366,695	378,771	358,366	141,680	137,924	6,741	7,124	7,170
Simcoe	329,666	340,702	307,720	72,881	83,163	5,117	4,605	4,734
Totals	696,361	719,473	666,086	214,561	221,087	11,858	11,729	11,904
Middlesex	315,485	308,768	304,514	166,959	162,980	10,336	9,773	10,451
Oxford	227,218	219,772	217,203	85,098	84,826	7,862	7,863	8,387
Brant	124,582	118,876	120,847	26,927	29,940	3,574	3,993	4,474
Perth	241,528	235,045	232,965	80,937	81,231	4,754	4,658	4,836
Wellington	315,676	304,193	295,323	85,926	85,582	4,378	4,682	4,815
Waterloo	175,268	165,350	164,761	32,732	31,908	4,948	4,869	5,184
Dufferin	139,408	129,304	124,555	35,033	35,151	1,486	1,418	1,501
Totals	1,539,165	1,481,308	1,460,168	513,612	511,618	37,338	37,256	39,648
Lincoln	103,252	99,807	101,708	22,747	28,281	8,150	7,714	7,882
Wentworth	146,854	145,329	143,621	35,020	39,022	8,861	8,847	9,049
Halton	110,523	110,170	107,344	33,493	38,506	4,859	4,947	4,834
Peel	176,651	175,772	162,959	33,399	38,687	4,207	4,360	4,220
York	311,787	312,065	300,106	53,467	59,127	6,285	6,591	7,609
Ontario	257,408	260,533	246,851	55,462	57,360	4,908	4,733	5,251
Durham	203,532	202,018	203,435	43,806	48,510	3,047	3,251	3,798
Northumberland	225,911	225,941	217,798	60,200	64,300	6,304	6,162	6,443
Prince Edward	133,996	136,326	130,827	31,469	36,623	5,817	5,637	6,146
Totals	1,669,314	1,667,961	1,614,649	369,063	410,416	52,438	52,242	55,232
Lennox & Add'n	149,268	143,514	140,635	44,636	51,282	2,358	2,600	2,748
Frontenac	141,160	149,402	140,799	56,476	54,167	1,964	1,993	2,205
Leeds & Gren	250,662	246,299	237,041	136,204	154,167	2,513	2,961	3,142
Dundas	88,834	91,328	85,937	40,413	39,031	1,252	1,109	1,188
Stormont	75,583	75,243	72,719	35,668	39,587	767	764	982
Glengarry	92,220	94,656	87,585	46,145	41,217	584	565	582
Prescott	100,991	86,019	85,098	29,763	34,576	284	462	287
Russell	58,382	46,372	49,792	19,047	25,658	54	116	147
Carleton	196,315	189,290	183,116	70,232	70,730	299	269	533
Renfrew	173,227	175,633	163,594	63,279	70,435	186	229	539
Lanark	147,795	153,164	144,211	99,734	104,551	837	1,011	1,085
Totals	1,474,437	1,450,920	1,390,527	641,597	685,401	11,098	12,079	13,438
Victoria	178,308	181,107	173,020	42,419	39,674	1,377	1,541	1,751
Peterborough	148,107	147,414	141,307	52,334	56,298	1,734	1,803	1,935
Haliburton	22,544	22,192	20,105	5,611	5,233	111	92	100
Hastings	220,158	231,630	222,188	94,939	89,989	5,108	4,694	5,403
Totals	569,117	582,343	556,620	195,303	191,194	8,330	8,130	9,189
Muskoka	42,056	41,439	37,724	8,776	9,582	422	356	358
Parry Sound	29,074	20,869	20,076	6,314	4,631	15	17	27
Nipissing	8,308	.....	923	1,417	.....	11	.....	1
Algoma	35,576	31,654	27,418	5,358	4,982	169	153	152
Totals	115,014	93,962	86,141	21,865	19,195	617	526	538
The Province	7,912,297	7,758,583	7,482,427	2,542,092	2,607,962	182,796	182,766	189,953

RATIOS OF AREAS UNDER CROP.

TABLE XXV. Showing by County Municipalities and groups of Counties the number of acres under the various crops in Ontario in 1890, per 1,000 acres of cleared land.

Counties.	Fall wheat.	Spring wheat.	Barley.	Oats.	Rye.	Peas.	Corn.	Buckwheat.	Beans.	Hay and clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.	Totals.
Essex	122.3	13.7	37.2	192.4	4.2	19.7	181.2	4.4	4.2	188.5	12.2	1.0	.5	.8	782.3
Kent	158.5	33.6	28.7	115.1	4.9	41.9	90.6	4.5	82.1	175.5	9.9	1.5	.8	1.3	748.9
Elgin	140.0	5 2	28.8	124.0	4.0	68.1	47.7	7.4	9.3	195.2	9.5	1.2	.8	1.4	642.6
Norfolk	130.6	3.3	26.0	120.2	41.5	101.8	55.6	23.1	1.6	181.7	12.0	1.0	1.2	5.6	705.2
Haldimand	144.4	35.7	62.0	125.0	2.8	89.6	9.4	2.1	1.6	236.4	6.5	1.0	.4	0.4	717.3
Welland	124.2	5.5	22.0	132.4	1.5	37.1	34.4	11.3	7.1	292.3	13.8	.7	.4	1.3	684.0
Group	138.6	16.8	33.7	132.9	10.0	60.2	71.5	8.6	21.7	205.0	10.5	1.2	.7	1.8	713.2
Lambton	97.9	23.2	56.6	180.9	1 5	51.7	30.1	3.6	1.5	193.5	10.2	1.4	.9	1.0	654.0
Huron	79.8	16.6	57.4	167.8	.6	80.8	4.5	.8	.2	195.5	8.8	3.8	.7	11.7	629.0
Bruce	71.5	30.0	36.3	160.8	2.1	95.0	4.0	1.9	.3	220 7	10.1	1.7	.8	12.5	647.7
Group	81.1	22.8	49.9	168 4	1.3	79.0	10.2	1.8	.6	203.7	9.6	2.5	.8	9.5	641.2
Grey	33.5	60.3	28.1	182.2	1.9	86 8	3.6	1.1	.6	225.4	12.2	1.2	1.0	17.5	655.4
Simcoe	99.4	76.2	63.5	156.9	6.3	77.8	2.8	1.9	.2	173.4	15.3	1.2	1.1	7.4	683.4
Group	64.0	67.7	44 5	170.5	3.9	82.6	3.2	1.5	.4	201.4	13.6	1.2	1.1	12.8	668.4
Middlesex	112.6	9.3	33.2	157.4	1.7	55.8	24.2	7	.6	175.7	11.4	3.3	1.2	3.4	590.5
Oxford	97.8	20.7	47.7	168.0	4.3	59.5	31.1	2.7	.5	190.8	9.1	4.8	1.0	17.0	655.0
Brant	125.0	9.1	128.8	120.9	9.5	72.0	28.9	4.6	1.6	191.6	12.7	2.4	1.1	19.8	728.0
Perth	81.1	27.1	50.6	187.2	.2	80.3	4.6	.2	....	198.0	9.3	7.8	1.4	12.8	660.6
Wellington	27.5	47.3	77.3	206.8	1.4	98.5	3.5	1.3	.1	205.5	14.1	3.2	.9	29.5	716.9
Waterloo	135.7	11.8	86.9	184.7	2.4	83.4	6.2	.6	.2	182.1	12.1	2.9	1.6	19.9	730.5
Dufferin	25.1	127.3	64.2	205.5	1.8	78.8	1.2	.4	.1	175.5	20.1	.7	.6	14.1	715.4
Group	84.9	31.4	62.0	177.5	2.5	74.5	14.7	1.3	.4	189.1	12.1	3.9	1.1	15.8	671.2
Lincoln	118.7	19.7	34.7	132.0	4.0	50.2	39.0	5.5	1.7	253.2	11.4	1.3	.7	1.7	673.8
Wentworth	113.5	24.5	73.9	145.6	4.6	67.1	24.9	6.4	2.6	199.9	20.2	2.8	1.1	14.7	701.8
Halton	96.0	52.0	70.8	132.2	5.2	80.9	10.6	.4	.1	179.9	9.0	3.3	.6	10.2	651.2
Peel	66.8	93.1	152.6	153.8	2.4	84.8	4.6	.6	.1	148.7	13.3	1.9	1.0	5.7	729.4
York	58.8	80.2	124.4	186.5	2.7	87.9	6.6	.4	.2	174.7	20.1	4.7	2.0	10.7	759.9
Ontario	12.2	150.6	100.3	161.4	4.5	82.2	9.4	3.6	.7	175.9	13.2	2.9	1.5	37.6	756.0
Durham	15.6	131.3	138.7	133.9	14.3	81.2	8.0	14 7	1.4	172.0	11.7	2.6	2.1	19.2	746.7
Northumberland	40.1	90.9	100.9	107.4	38.5	62.8	16.0	34.4	1.8	182.3	14.6	1.5	.9	11.0	703.1
Prince Edward	18.3	37.7	173.8	79.4	34.7	103.7	40.2	46.3	2.1	184.2	12.7	.6	.4	.5	734.6
Group	53.5	85.0	111.6	142.2	12.3	78.8	15 1	11.9	1.1	181.5	14.6	2.6	1.3	14 1	725.6
Lennox & Add'n	12.9	31.8	126.2	123.0	16.8	48.1	13.2	27.7	1.2	311.2	15.0	.5	.3	.5	728.4
Frontenac	3.2	42.8	57.0	136.0	15.4	46.8	11.2	9.5	.6	297.9	19.6	.4	.6	1.2	642.2
Leeds & Gren	6.4	31.4	19.9	172.3	9.9	13.2	22.5	16 9	1.3	284.4	17.6	.6	.7	.9	598.0
Dundas	2.1	31.2	39.3	219.5	3.6	9.3	16.4	17.8	1.7	295.0	16.3	.6	.6	.5	653.9
Stormont	1.1	34.6	28.0	189.9	2.8	13.9	14.4	19.9	1.6	317.4	16.9	.5	.3	1.2	642.5
Glengarry	.4	54.1	16.7	206.9	1.4	27.0	13.9	10.7	1.6	276.7	15.5	.6	.3	.3	626.1
Prescott	.3	65.4	36.1	223.9	.4	46.2	9.2	12.7	2.6	314.3	15.9	1.5	.3	.4	729.2
Russell	.3	44.2	27.6	278.4	5.9	50.2	9.3	17.1	2.4	258.8	17.8	3.0	3.0	7.1	725.1
Carleton	2.7	86.8	32.3	219.8	15.7	34.5	11.5	9.8	2.1	224.3	21.8	3.7	3.4	8.7	677.1
Renfrew	1 6	100.8	6.4	164.7	34 7	81.0	3.0	5.3	2.4	241.5	14.5	.4	.3	2.8	659.4
Lanark	7.6	56.2	12.5	143.8	11.8	39.8	7.1	17.2	1.0	206.8	11.7	.6	.6	1.6	518.3
Group	4.3	54.6	34.6	178.8	12.9	37.2	12.5	14.5	1.6	268.7	16.7	1.1	.9	2.3	640 7
Victoria	11.6	145.2	105.1	172.0	7.4	70.0	3.0	7.8	.5	174.7	14.3	3.1	1.1	13.9	729.7
Peterborough	35.9	124.5	34.1	136.8	26.3	69.5	3.3	8.4	1.2	172.8	13.7	1.9	1.9	7.1	637.4
Haliburton	9.0	64.9	10.3	193.2	13.7	70.1	4.9	11.4	.9	340.9	24.1	.4	.8	9.2	753.8
Hastings	35.5	31.4	80.7	130.2	31.6	62.2	23.8	15.7	1.0	227.0	15.9	3.2	.7	2.5	661.4
Group	27.7	91.5	72.4	146.4	22.5	66.8	11.4	11.2	.9	200.8	15.1	2.7	1.2	7.3	677.9
Muskoka	.6	21.7	10.2	189.5	6.6	67.4	4.0	9.9	.7	402.4	25.1	.7	1.8	14.3	754.9
Parry Sound	3.7	27.2	18.0	180.3	3.7	59.8	1.3	4.7	1.0	347.3	26.4	.1	1.4	17.6	692.5
Nipissing	1.8	22.9	17.1	147.2	7.2	61.4	3.1	7.5	1.0	415.0	38.0	.1	.9	9.9	733 1
Algoma	14.9	103.4	15.2	148.5	6.6	112.2	1.4	3.2	.5	320.6	22.8	.1	.5	11.1	761.0
Group	5.8	47.8	14.3	171.7	5.8	78.4	2.5	6.3	.7	363.9	25.7	.3	1.2	13.9	738.3
The Province	61.8	51.6	60.2	161.5	8.8	67.0	19.2	7.7	3.4	211.2	13.6	2.2	1.0	9.5	678.7

PART II.

LIVE STOCK, THE DAIRY AND THE APIARY.

LIVE STOCK.

"Owing to the plentifulness of fodder and the mildness of the winter," ran the account in the May bulletin, "the present condition of live stock is with few exceptions all that could be desired. In very many cases there is a superabundance of food, which will be carried over. Hay is very cheap, ranging as low in one instance as $4 per ton. A few instances are reported, however, from the extreme south-west in which there appears to have been some scarcity in the root supply, and where the corn crop was too largely depended upon for fodder. Cattle are generally thrifty and strong, although a few correspondents (especially in the district referred to) report them as thin in flesh. Horses are in an exceptionally good condition for spring work. The mild winter and small amount of labor would seem to have been unusually favorable to them. Sheep and pigs are also thrifty generally, except in cases where they were allowed the run of the fields throughout the winter. Sheep are reported as scarce in parts, but the lambing season has been a favorable one and there is a probable increase in the number of lambs all over. There seems also to be an increase in the number of young pigs, but complaint comes from the east that there has been an unusual mortality among them from some unknown cause. Distemper and influenza have also been strongly marked among horses. Some describe the symptoms as approaching those of la grippe, but there is a marked immunity from all malignant types."

According to the August bulletin most encouraging reports came from the eastern half of the province regarding the condition of pastures, but in the west and in the Niagara peninsula the dry weather appeared to have affected the fields more unfavorably. The abundant supply of hay and straw augurs well for the fall and the winter keep of stock, although of course much would depend upon the root crops. Stock generally were in fair condition, but good cattle were picked up very early in the season and there was not likely to be as many animals as usual left for fattening. While in the western districts complaints were made that the flow of milk was falling off considerably owing to the drouth, the great cheese producing counties along the St. Lawrence and in the county of Hastings appeared to feel but little difference in this respect, and reported much activity in the factories. The low price offered for milk was commented upon by several correspondents in the western part of the province.

The November bulletin contained the following cheerful references to the condition of live stock: "Fall pastures have been in unusually fine condition all over the province, and are for the most part still quite fresh and green owing to the abundance of warm showery weather. Hay is very abundant, and of straw and coarse feed there is about a sufficiency. All kinds of live stock are consequently in a thriving condition, but with the exception of hogs their numbers are somewhat small. Few farmers have yet commenced to stall-feed their cattle, but the supply of fodder for the winter months will be more than sufficient. Sheep are in good condition, but not numerous. Many farmers are fattening lambs for the December market, and there has been a greater demand than usual for breeding sheep. There is quite a notable increase in the number of hogs all over the province, and especially in the southern and south-western counties. Great numbers have already been finished and marketed on foot, and the rest are being rapidly fattened. The demand for all kinds of live stock has so far been brisk; in some localities in the southern part of the province buyers have picked up nearly everything, and fair prices have been paid."

HORSES. The following table gives the number of horses by county groups and for the province in each of the five years 1886-90, those for 1890 being also divided into classes :

Horses.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
Working horses..	42,394	31,238	26,329	62,351	69,231	61,305	22,191	3,421	318,460
Breeding mares.	19,498	15,615	11,167	26,479	26,995	22,038	7,863	1,498	131,153
Unbroken horses	32,343	25,365	16,201	40,811	44,345	35,616	13,747	1,595	210,023
Totals.... 1890	94,235	72,218	53,697	129,641	140,571	118,959	43,801	6,514	659,636
1889	84,975	66,750	52,855	124,325	131,551	111,250	42,135	4,954	618,795
1888	81,481	63,098	50,240	119,001	127,929	109,161	40,763	4,545	596,218
1887	77,539	59,936	47,774	114,529	125,713	105,900	39,938	4,032	575,361
1886	77,949	59,879	46,828	111,454	126,204	105,228	38,066	4,041	569,649

The table shows that among the farm stock of the province there are 318,460 working horses, 131,153 breeding mares and 210,023 unbroken horses, making a total of 659,636 or 40,481 more than the number reported last year. There has been an increase in the total number of horses every year given. Each group also surpasses its own figures for any previous year, the number of horses in 1890 being as follows for each district : Lake Erie 94,235, Lake Huron 72,218, Georgian Bay 53,697, West Midland 129,641, Lake Ontario 140,571, St. Lawrence and Ottawa 118,959, East Midland 43,801, Northern Districts 6,514.

HOGS. The appended table shows the total number of hogs by county groups and for the province in each of the years 1886-90, and gives the numbers over and under one year for 1890 :

Hogs.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
Over 1 year.	46,732	21,037	18,892	37,047	36,330	49,909	19,152	3,095	232,194
Under 1 year	195,903	86,469	76,736	202,263	174,655	106,714	56,047	9,578	908,365
1890	242,635	107,506	95,628	239,310	210,985	156,623	75,199	12,673	1,140,559
1889	197,015	73,096	74,104	171,444	148,233	115,645	48,411	7,521	835,469
Totals 1888	186,184	71,343	72,852	165,407	148,291	118,387	49,413	7,202	819,079
1887	185,843	69,700	71,015	162,601	154,678	126,061	56,799	6,120	832,817
1886	183,358	69,942	76,193	166,002	170,014	137,263	50,327	7,026	860,125

The number of hogs in the province has taken a tremendous leap upward compared with the returns for the previous or any preceding year, the increase in the number under one year being particularly large. It is not too much to assume that the bulletin entitled "The Swine Industry in Ontario," issued by this department in November, 1889, has been a considerable factor in contributing to this remarkable increase. The total number of all classes of hogs in the province is 305,090 more than in the previous year, an addition of nearly 37 per cent. Every group exhibits an increase over its figures for any previous year. The swine industry in Ontario is most largely followed in the Lake Erie and West Midland groups.

HORNED CATTLE. In the following table the number of horned cattle is shown by classes for 1890 (milch cows being given also for 1889), and the total number is given for each year since 1886 by county groups and for the province :

Cattle.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
Working oxen	1,497	911	1,559	810	781	798	1,921	1,890	10,167
Milch cows ... 1890..	86,520	74,690	56,281	155,643	121,643	209,490	62,380	11,191	777,838
Milch cows ... 1889..	87,594	75,577	59,119	158,255	124,002	203,188	62,809	8,627	779,171
Store cattle over 2 yrs..	42,125	69,048	36,442	87,420	42,495	47,637	18,106	4,367	347,640
Young and other cattle	92,484	107,087	76,493	170,386	107,072	141,553	49,498	14,494	759,067
Totals 1890	222,626	251,736	170,775	414,259	271,991	399,478	131,905	31,942	1,894,712
Totals 1889	224,401	250,936	172,527	417,907	293,214	374,038	132,928	25,948	1,891,899
Totals 1888	226,331	249,858	175,020	418,438	300,757	395,656	136,891	25,687	1,928,638
Totals 1887	232,334	244,961	170,157	429,356	312,483	395,230	138,977	24,766	1,948,264
Totals 1886	239,183	250,631	178,296	447,929	326,751	412,176	137,991	25,216	2,018,173

The total number of cattle in the province is 1,894,712, which, although 2,813 more than in 1889, is considerably less than the figures returned for any other year in the table. But although the total number of cattle has increased compared with the previous year, the number of milch cows in the province has decreased by 1,333. There has been a falling off in the number of this class in every group excepting the St. Lawrence and Ottawa counties (where the immense decline of last year has been more than regained) and the Northern Districts. While the largest number of all classes of cattle is to be found in the beef-raising West Midland group, by far the greatest number of milch cows appear in the dairying counties comprising the St. Lawrence and Ottawa District. The number of working oxen is decreasing with the advancement of settlement and general civilisation, being less by 2,405 than in 1888, or a falling off of 19 per cent. in two years.

SHEEP. The number of sheep is presented in the following table by county groups and for the province in each of the years 1886-90 :

Sheep.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
Over 1 year.	99,594	107,747	98,551	150,078	111,970	165,200	46,074	16,049	795,263
Under 1 year	73,365	80,114	64,587	105,325	77,110	102,011	30,654	11,266	544,432
Totals 1890	172,959	187,861	163,138	255,403	189,080	267,211	76,728	27,315	1,339,695
Totals 1889	146,038	172,656	167,947	257,840	214,475	275,905	89,084	20,235	1,344,180
Totals 1888	147,428	167,270	163,944	254,755	223,363	283 237	91,045	18,002	1,349,044
Totals 1887	152,850	169,459	167,592	258,590	216,450	315,130	97,805	18,285	1,396,161
Totals 1886	171,238	191,776	189,405	300,149	263,571	369,851	105,664	19,295	1,610,949

The total number of sheep in the province is 1,339,695, which is less by 4,485 than in the previous year, and the least also of any of the years comprising the table. This decrease has been mainly confined to sheep over one year old, in which class there has been a

decline for some years ; but the number of young sheep has increased compared with the returns of 1888 and 1889. A marked addition has been made to the total number of sheep in the Lake Erie and Lake Huron groups and the Northern Districts, although there is a falling off in the other five groups.

THE WOOL CLIP. The following table gives the number of fleeces with their total and average weights, by county groups and for the province for the years 1889 and 1890, together with the averages for the nine years 1882-90 :

Districts.	1890.			1889.			1882-90.		
	Fleeces.	Pounds.	lb. per fleece.	Fleeces.	Pounds.	lb. per fleece.	Fleeces.	Pounds.	lb. per fleece.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Lake Erie	99,241	553,372	5.58	84,517	485,196	5.74	106,684	593,490	5.56
Lake Huron.....	108,948	650,357	5.97	104,817	615,403	5.87	121,451	694,403	5.72
Georgian Bay	99,818	567,196	5.68	104,259	588,106	5.64	114,362	630,014	5.51
West Midland....	151,915	893,332	5.89	154,937	882,542	5.70	191,769	1,089,563	5.68
Lake Ontario.....	114,650	681,541	5.94	129,417	755,834	5.84	158,226	928,641	5.87
St. Law. & Ottawa.	168,454	874,573	5.19	178,774	894,353	5.00	224,995	1,094,626	4 87
East Midland.....	47,888	261,926	5.47	56,261	291,425	5.18	67,548	350,293	5.19
Northern Districts	16,572	92,400	5.58	12,948	76,037	5.87	11,600	64,984	5.60
The Province.	807,486	4,574,700	5.67	825,930	4,588,896	5.56	996,635	5,446,014	5.46

The total number of fleeces is less by 18,444 than in the previous year, but falls off 189,-149 compared with the average for the nine years. The weight per fleece is 5.67 lb., being .11 lb. above that of 1889 and 21 lb. higher than the average for the years 1882-90, which brings the total weight of wool within 14,196 lb. of that of the previous year, although it is still very much below the weight of the average of the nine years. The St. Lawrence and Ottawa and West Midland groups lead in the number of fleeces, but the former district has an average weight per fleece of only 5.19 lb. (it is also the lowest for the nine years), while the Lake Huron counties average 5.97 and the Lake Ontario group comes second with 5.94. With their positions reversed these two groups also lead in the average weight per fleece for the nine years.

POULTRY. The number of poultry to all classes in each of the five years 1886-90, is given by county groups and for the province in the appended table :

Poultry.		Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.
Turkeys ...		56,949	37,380	33,998	86,580	97,777	125,206	23,626	5,226	466,742
Geese		49,941	50,826	45,588	83,214	88,222	87,914	27,500	5,517	438,722
Other fowls.		786,317	690,432	504,854	1,254,594	1,164,132	1,081,643	386,511	80,917	5,949,400
Totals	1890	893,207	778,638	584,440	1,424,388	1,350,131	1,294,763	437,637	91,660	6,854,864
	1889	879,552	727,269	557,286	1,342,071	1,130,730	1,170,461	430,424	66,505	6,304,298
	1888	861,584	712,798	548,482	1,303,997	1,112,998	1,139,227	422,163	62,865	6,164,114
	1887	942,641	703,849	549,889	1,292,085	1,260,654	1,182,717	444,762	61,764	6,438,361
	1886	1,007,965	740,057	579,679	1,377,089	1,371,697	1,394,001	433,790	64,637	6,968,915

The total number of all classes of poultry is given at 6,854,864, which is 550,556

more than the number reported in the previous year. An increase appears in every group. The largest number of turkeys is found in the St. Lawrence and Ottawa counties, the greatest number of geese is reported in the Lake Ontario group, and the West Midland counties lead in the number of other fowls and in the total number of all classes of poultry, closely followed in both particulars by the two districts previously named.

THE DAIRY.

The following summary of the condition of the dairying business appeared in the November bulletin: "The past season has been a favorable one to the dairying industry, with plenty of grass and water. In the eastern part of the province especially cheese-making has flourished, and farmers seem well satisfied with the returns. Throughout the rest of the province cheese appears to have taken the lead also, and to have given better results than butter, except in the neighborhood of cities and large towns. Cheese factories are everywhere more numerous than creameries, and it is hard to make a comparison of the two products. There are many creamery advocates, however, and many express a desire to see them established in their neighborhoods. The large percentage of butter is still made by the farmer's wife for home and local consumption. But the quality is very uneven and the quantity irregular, and for these reasons some suggest that it would be better to have butter for the market made by the creameries alone in order that greater uniformity might be secured, as in the case of cheese. Durhams and their grades are still the favorite breed for the dairy cow in the west, but Holsteins and Jerseys are being introduced to a considerable extent where butter is made, and they are well liked. In the east, Holsteins, Ayrshires and Durhams and their grades are the most popular breeds."

CHEESE. The total number of factories reported to the Bureau as in operation in 1890 was 817, being 33 more than in the previous year, and 69 more than the average for the eight years 1883-90. The following table gives the statistics for these factories for each of the years named, based on the returns of factories which have reported during the several years, together with the annual averages for the eight years' period:

Year.	Factories in operation.	Quantity of—		Gross value of cheese.	Average No. of patrons.	Average No. of cows.	Milk required to make 1 lb. cheese.	Value of cheese per 100 lb.	Average date of opening.	Average date of closing.
		Milk used.	Cheese made.							
	No.	lb.	lb.	$			lb.	$ c.		
1890...	817	836,387,516	79,364,713	7,189,957	44,838	304,584	10.54	9 06	May 4	Oct. 31
1889...	784	760,146,327	72,592,847	6,787,619	43,215	273,231	10.47	9 35	" 4	" 30
1888...	737	686,369,013	65,299,751	6,031,470	42,065	256,780	10.51	9 24	" 5	" 24
1887...	737	691,934,579	65,638,656	6,918,913	42,512	254,510	10.54	10 54	" 4	" 27
1886...	770	654,703,243	63,721,621	5,893,818	37,665	237,106	10.27	9 25	" 7	" 29
1885...	752	733,437,254	71,209,719	5,781,569	44,208	260,244	10.30	8 12	" 4	" 29
1884...	751	685,964,727	66,939,573	6,998,889	38,646	254,852	10.25	10 46	" 3	" 30
1883...	635	539,696,197	53,513,032	5,589,339	32,636	193,840	10.08	10 45	" 3	" 30
1883-90	748	698,579,857	67,284,989	6,398,947	40,723	254,395	10.38	9 51	" 4	" 29

The quantity of milk used in the manufacture of cheese in 1890 is 76,241,189 lb. above the figures for the previous year, and the quantity of cheese made therefrom is 6,771,866 lb. more than the make of 1889, which led the other years of the table in both respects. An increase of $402,388 is observed in the total value of cheese manufactured, although the value of cheese per 100 lb. fell from $9.35 in the previous year to $9.06. The average quantity of milk required to make a pound of cheese was 10.54 lb., exactly the same as reported in 1887, but more than in any other year comprising

the table, and .16 lb. more than the average for the eight years. There is an increase of 1,623 in the number of patrons, and of 31,353 in the number of cows. The average date of opening was May 4th, the same as that for the eight years, but the average date of closing was two days later than that of 1883-90.

The following table presents statistics of an average factory by county groups and for the province. It will be observed that the figures vary greatly in some of the groups, the western factories being much more largely patronised than those in the east:

Districts.		Quantity of—		Gross value of cheese.	Average No. of patrons.	Milk required to make 1 lb. cheese.	Value of cheese per 100 lb.	Average date of opening.	Average date of closing.
		Milk used.	Cheese made.						
		lb.	lb.	$		lb.	$ c.		
Lake Erie ...	1890....	1,048,787	98,282	8,863	72	10.67	9.02	May 4	Nov. 6
	1889....	895,015	83,800	7,642	68	10.68	9.12	" 8	" 2
Lake Huron.	1890...	1,106,257	102,880	9,353	84	10.75	9.09	" 15	Oct. 29
	1889....	1,010,109	95,246	8,809	83	10.61	9.24	" 16	" 21
Georgian Bay	1890....	737,871	70,384	6,276	60	10.48	8.91	" 21	" 16
	1889....	626,989	59,646	5,457	50	10.51	9.15	" 10	" 14
West Midland.	1890....	1,621,221	151,531	13,909	74	10.70	9.18	" 1	Nov. 8
	1889 ...	1,545,984	144,797	13,605	75	10.68	9.40	" 2	" 8
Lake Ontario	1890....	819,430	77,779	6,977	51	10.54	8.97	" 4	Oct. 28
	1889...	725,992	69,438	6,506	51	10.46	9.37	" 6	" 28
St. Lawrence and Ottawa.	1890....	818,580	78,548	7,034	41	10.42	8.96	" 3	" 28
	1889....	793,080	77,261	7,207	40	10.26	9.33	" 2	" 29
East Midland	1890 ...	978,570	94,972	8,682	46	10.30	9.14	" 1	Nov. 1
	1889....	883,568	86,516	8,269	44	10.21	9.56	" 2	Oct. 31
The Province	1890....	1,023,730	97,142	8,800	55	10.54	9.06	" 4	" 31
	1889....	969,574	92,593	8,658	55	10.47	9.35	" 4	" 30
	1883-90.	934,086	89,968	8,556	54	10.38	9.51	" 4	" 29

These averages are computed from the aggregates of factories returned. For the province the average number of patrons per factory is 55, the same number as in the preceding year, but one more than the average for the eight years. There is an increase of 54,156 lb. of milk per factory, and an addition of 4,549 lb. in the quantity of cheese made, compared with the previous year, and the total value of the output per factory is $142 more than in 1889. This improvement is chiefly owing to the increase in the average number of cows per factory, which is 24 more than in the previous year, 373 being given as the average for the province. In examining the figures by groups it will be seen that the West Midland counties continue to lead in the amount of business done in the average factory, although the average number of patrons, which is 74, is less by 10 than in the Lake Huron group. The least number of patrons for any group is 41, the record given for the St. Lawrence and Ottawa counties, but three out of every seven factories in the province are to be found in this district. In every group excepting the Lake Erie and Georgian Bay an increase is observed in the quantity of milk required to make a pound of cheese. In the East Midland group it takes only 10.30 lb. of milk to make a pound of cheese, while in the Lake Huron district 10.75 lb. of milk are required. Every group shows a reduction in the value per 100 lb. of cheese, there being 42 cents difference in the figures for 1890 in the East Midland district compared with the previous year, and a falling off of 40 cents in the Lake Ontario group. The make of the West Midland counties averaged the best price, viz., $9.18 per 100 lb., while that of the Georgian Bay group brought only $8.91. Although the figures given for the province show the average date of opening to be the same for the three periods given, and the date of closing is but one later than in 1889, the figures in the various groups show a considerable diversity compared with each other, and some of the groups show complete change of dates compared with their respective records in the previous year. The date of

opening in the Lake Erie group averaged four days earlier and the date of closing four days later than in the preceding year. In the Lake Huron counties the opening averaged one day earlier and eight days later than in 1889. In the Georgian Bay district the date of opening was very late, being on the 21st of May, ten days later than in 1889, but it closed two days later. Comparatively little change was made in the length of season in the other groups. The factories in the West Midland group were at work for the longest period, the average opening being May 1 and the closing November 8. The compilation of the returns by counties will be found in Table v.

BUTTER. The following table gives statistics by counties of 32 creameries reported out of 39 in operation in Ontario, showing the quantity and value of product (including cheese in five combination factories), the average number of patrons, the average price of butter per pound, and the dates of opening and closing :

Counties.	Creameries in operation.	Creameries making returns.	Butter.		Cheese.		Total value of product.	Average No. of patrons.	Average price of butter per lb.	Average date of opening.	Average date of closing.
			Quan.	Value.	Quan.	Value.					
	No.	No.	lb.	$	lb.	$	$		cts.		
Kent	1	1	9,203	1,841	.....	.....	1,841	29	20.00	Jun. 2	Sep. 27
Lambton	1	1	17,195	3,189	.....	.....	3,189	36	18.55	May 5	Oct. 31
Huron	4	3	69,800	13,580	.....	.....	13,580	257	19.46	" 21	" 19
Bruce	8	7	266,496	51,469	.....	.....	51,469	809	19.31	" 18	" 12
Grey	7	7	427,967	80,692	.....	.....	80,692	1,008	18.85	" 17	" 23
Middlesex	1	1	10,860	2,175	5,451	518	2,693	3	20.03	" 6	*
Perth	1	1	43,100	8,405	.....	.....	8,405	120	19.50	" 15	Nov. 8
Wellington	1	1	29,252	5,909	.....	.....	5,909	85	20.20	" 26	Oct. 4
Waterloo	4	3	91,140	16,370	86,117	5,430	21,800	258	17.96	" 19	" 25
Durham	1	1	13,400	2,483	.....	.....	2,483	64	18.53	" 27	" 13
Prince Edward	2	1	13,610	3,062	63,989	4,136	7,198	60	22.59	" 1	Nov. 1
Leeds and Grenville	2	2	59,003	11,997	.....	.....	11,997	54	20.33	Apr. 26	" 30
Dundas	2	1	49,313	10,106	.....	.....	10,106	59	20.49	" 27	Oct. 31
Stormont	1	1	39,816	8,123	135,609	8,610	16,733	76	20.40	May 1	Nov. 5
Glengarry	1	1	7,400	1,443	19,272	1,734	3,177	17	19.50	" 1	" 1
Other counties.	2	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
The Province :											
1890	39	32	1,147,555	220,844	310,438	20,428	241,272	2,935	19.24	.....	.....
1889	33	30	876,003	184,067	219,808	14,406	198,473	2,221	21.01	.....	.....

* Worked throughout the year. Reported to February 1st, 1891.

The number of creameries has been increased by 6. Of the 32 creameries returned 5 make both butter and cheese, one each in the counties of Middlesex, Waterloo, Prince Edward, Stormont and Glengarry. Only 3 were thus engaged in 1889. The output of butter from the 27 butter factories was 38,896 lb. per factory, as compared with 29,517 lb. in 1889, 26,592 lb. in 1888 and 34,250 lb. in 1887. The number of patrons increased from 74 per creamery in 1889 to 92 in 1890. The prices realised for butter averaged $1.77 per 100 lb. less than in 1889. More than 60 per cent. of the creamery butter is manufactured in the counties of Grey and Bruce. Of the creameries reporting, 7 state the quantity in pounds of cream gathered and 7 the quantity of milk gathered. The fomer use 1,693,168 lb. of cream in manufacturing 373,417 lb. of butter, valued at

$71,988. It thus required 4.53 lb. of cream per pound of buttter as compared with 4.14 in 1889, and 4.38 in 1888. In those creameries manufacturing from milk it took 25.24 lb. of milk for a pound of butter, as compared with 24.28 in 1889 and 24.9 in 1888. The average value of the product of 100 lb. of milk by this system was 79.6 cents (exclusive of the value of the buttermilk). The average from cheese factories was 86.0 cents. The average from the 5 combination cheese and butter factories was 90.2 cents. These factories used 4,433,003 lb. of milk, and made 97,346 lb. of butter, valued at $19,551, and 310,438 lb. of cheese valued at $20,428. By estimating the business of the 7 factories not returned, in the same proportion to the 27 butter factories reported, it will be found that the 39 creameries used 37,812,534 lb. of milk, or the product of 13,770 cows.

Ensilage. Correspondents report a very slow movement in the erection of silos. The idea seems to have met with the greatest favor in the Lake Ontario counties and in some of the counties along the St. Lawrence river, but even in these sections dairymen are moving cautiously. One correspondent in Dundas county states : " If the silos sprinkled over the township turn out well this year the practice of growing corn for ensilage is likely to become quite general next year." Another correspondent, however, claims that an objection to the silo is " the large amount of work it demands during a busy season of the year." Corn is the principal crop used for ensilage. Some correspondents report the silos as being remarkably successful, while one suggestively describes a neighboring silo as " smelling like a brewery."

THE APIARY.

The winter, according to the May reports, was favorable to the apiary, the losses resulting chiefly from stocks wintered inside finding the quarters too warm. Dysentery was reported by a few correspondents, and some colonies died from starvation, but taking the province over it was estimated that the losses would not average over eight per cent., and with experienced apiarists that percentage of losses would be further reduced. Western beekeepers appear to have been more successful than those in the east. The spring was rather backward for bees, and when correspondents wrote many colonies had not been out for a fly. Two cases of swarming in April were mentioned in Grimsby—an unusual occurrence.

The August bulletin had the following :—" Swarming was late as a rule, but in the majority of cases was quite frequent. Although occasional mention is made of spring dwindling and dysentery, very little is said about foul brood, and the general health of bees may be classed as good. There was a full supply of white clover, but linden was a failure owing to unpropitious weather at the time of bloom. The bees, however, found compensation in thistles and dandelions, which yielded considerable nectar. The average yield of honey per hive may be placed at 40 pounds, and in this matter eastern beekeepers appear to have been more favored than those in the west. The outlook for the apiary was fair, as correspondents wrote, although some were fearing the effects of the drouth then prevailing."

The November bulletin thus summed up the question of bees and honey :—" Very contradictory reports are given regarding the condition of the apiary. Some correspondents, in the Lake Ontario counties more particularly, speak of bees as in good condition and the yield of honey as a very fair one. The general experience, however, was that the fall was too wet and cold for the gathering of a full supply of nectar, and that bees could do but little more than hold their own in the latter part of the season. The result is that unskilled apiarists will find themselves with empty stores and weak colonies, which mean feeding back and doubling up, or annihilation. The net yields per colony, spring count, vary from nothing at all up to 200—the latter an exceptional case in Welland—but the average may be placed at about 40 lb. No disease is reported."

FACTORIES AND CREAMERIES IN ONTARIO.

CHEESE FACTORIES IN OPERATION IN ONTARIO DURING 1890, WITH NAME AND POST OFFICE ADDRESS OF THE SECRETARY OF EACH FACTORY.

NOTE.—No return received from factory marked with asterisk (*).

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
ESSEX:			
Mersea	Blytheswood	C. W. Hind, Prop.	Blytheswood.
KENT:			
Camden	Dawn Mills	J. T. Race, Prop.	Dawn Mills.
	*Thamesville	James Secord, Sec.	Thamesville.
Chatham	*Chatham Centre	T. McKerrell, Sec.	Eberts.
	Chatham Gore	David McArthur, Pres.	Tupperville.
	Sydenham Valley	J. N. McCoy	Wallaceburg.
Harwich	*Creek Road	John Buller	Harwich.
Howard	Botany	D. A. Graves, Sec.	Botany.
	*Buller's	James Buller, Prop.	Selton.
Orford	Orford Cheese Mfg. Co.	S. McDonald, Sec.	Muirkirk.
Raleigh	*Scaman's	Wm. S. Scaman	Charing Cross.
Tilbury East	Valetta	J. M. Hyde	Valetta.
ELGIN:			
Aldborough	Crinan	W. H. McLean	Crinan.
	*Rodney	Wm. Johnston, Prop.	Rodney.
	Rosedale	Arch. McColl, Sec.	Aldborough.
	West Lorne	John F. Taylor, Sec.	West Lorne.
Bayham	Bayham	E. T. Martin, Sec.	Griffin's Corners.
	Bayham Br. (Brownsville)	Benj. Hopkins, Sec.-Treas.	Brownsville.
	Bayham and Malahide	John L. Brown, Sec.	Corinth.
	New England	O. E. Twiss, Sec.	Tilsonburg.
	*Novia Scotia St	Miss J. Saxton, Sec.	Lakeview.
	Guysborough	George Bennett, Sec.	Guysborough.
	Vienna	J. T. Gamble, Sec.	Vienna.
Dorchester S.	Avon	Wm. Dafoe, Sec.	Avon.
	Lyons	Thos. Wilkinson, Sec.	Lyons.
	Springfield	John Clunas, Sec.	Springfield.
Dunwich	Dutton	W. A. Ostrander, Prop.	Dutton. Box 217.
	Wallacetown	A. Keilor	Wallacetown.
Malahide	Dunboyne	Noble F. Tufford, Sec.	Dunboyne.
	Malahide	R. Abell	Seville.
	Northwood	George Beckett, Sec.	Aylmer.
Southwold	Iona Station	McCallum Bros, Props.	Iona Station.
	Fingal	Thos. E. McLaughlin, Sec.	Fingal.
	Payne's Mills	Wm. Sharon, Sec.	Frome.
	West Magdala	R. R. Cranston, Prop.	West Magdala.
Yarmouth	Elgin	J. W. Scott, Prop.	Sparta.
	Mapleton	A. Charlton	Mapleton.
	*Springwater	Asa Pound, Prop.	New Sarum.
	Yarmouth Centre	James Brown, Sec.	YarmouthCentre.
NORFOLK:			
Charlotteville	St. Williams	G. W. Newman, Sec.	St. Williams.
	Vittoria	John Pow, Sec.	Vittoria.
	Walsh	Walter Rollings, Sec.	Walsh.
Houghton	*Clear Creek	James Slater	Clear Creek.
	Houghton Centre	S. T. Jackson, Prop.	Houghton.
Middleton	Courtland	O. E. Twiss, Sec.	Tilsonburg.
	Delhi	G. R. Gray, Sec.	Delhi. Box
Townsend	Bloomsburg	J. H. Lingwood, Sec.	Bloomsburg.
	Boston	W. A. McIntosh, Sec.	Boston.
	Rockford, Villa Nova	H. W. Foster, Sec.	Villa Nova.
	Waterford	John Martin	Waterford.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
NORFOLK—*Con.*			
Walsingham	*Carholme	James Knowles, Sec.	Carholme.
	Lynedoch	C. A. Ostrander, Prop.	Lynedoch.
	Marston	C. H. Brayley, Sec.	Marston.
Windham	Bookton	Norman McCurdy, Sec.	Bookton.
	Nixon	W. S. Wood, Sec.	Nixon.
	Ranelagh	G. A. Carter, Sec.	Ranelagh.
	Vanessa	W. J. Reavely	Vanessa.
Woodhouse	Black Creek	W. C. Parsons, Prop.	Jarvis.
	Excelsior	W. H. Olds, Sec.	Simcoe.
	*Lynn Valley	E. G. Ford, Prop.	Lynn Valley.
HALDIMAND:			
Canborough	Attercliffe Sta.	Harold Eagle, Sec.	Attercliffe Sta.
	Canborough	James N. Paget, Prop.	Canborough.
Cayuga N.	*Kohler	John J. Lint, Sec.	Kohler.
Dunn	Lake View	F. Splatt, Prop.	Dunnville.
Moulton	*Stromness	Arch. McDonald	Stromness.
Rainham	Selkirk	Joel Hoover	Selkirk.
Seneca	Tyneside	J. M. Clysdale, Prop.	Tyneside.
Walpole	Cheapside	R. A. Walter, Sec.	Cheapside.
	Jarvis West	W. C. Parsons, Prop.	Jarvis.
	Springvale	John Hainer, Treas.	Springvale.
	Walpole	John W. Bain, Prop.	Cheapside.
WELLAND:			
Bertie	*Bertie	E. O. Disher, Sec.	Ridgeway.
Wainfleet	Forks Road	John G. Wills, Sec	Forks Road.
	*Wellandport	Hamilton Johnson	Wellandport.
LAMBTON:			
Bosanquet	Ridge Tree	Alexander Jamieson, Sec.	Thedford.
Brooke	Aberfeldy	John J. Risk, Prop.	Aberfeldy.
	Alvinston	R. J. Ward, Prop.	Alvinston.
	Brooke and Warwick	Alex. Cowan, Sec	Watford.
	Walnut	W. G. Willoughby, Prop.	Walnut.
Euphemia	*Annett's	John J. Risk, Prop.	Aberfeldy.
	*Florence	J. W. Healy	Florence.
Plympton	Forest	Nicholas Hanning	Forest.
	*Gala Bank	Wm. Symington, Prop.	Camlachie.
	South Plympton	A. D. Anderson, Sec.	Wyoming.
	*Uttoxeter	Edward Archer, Sec.	Warwick West.
Sarnia	*Vyner	Miles Carrick, Sec.	Mandaumin.
Sombra	Sombra Cheese Co.	W. S. Howell, Sec.	Thornyhurst.
Warwick	*Maple Grove	B. Bachelor, Sec.	Birnam.
	Thompson	Wm. Thompson	Arkona.
	Warwick	J. S. Clark, Prop.	Warwick West.
HURON:			
Grey	Ethel	Robert Barr, jr., Prop	Ethel.
	Grey and Morris	Daniel Stewart, Sec.	Brussels.
	Molesworth	Henry Coghlin, Sec.	Molesworth.
	Walton	R. H. Ferguson, Sec.	Walton.
Howick	Fordwich	James Fallis, Sec.	Newbridge.
	Peoples	Wm. McKercher, Sec.	Wroxeter.
	Springbank	George Padfield, Sec	Gorrie.
Hullett	Constance	R. Jamieson, Sec.	Seaforth.
McKillop	Winthrop	John C. Morrison, Sec.	Winthrop.
Stanley	*Blake	Asa J. Styles, Sec	Blake.
Stephen	Centralia	R. F. Hicks	Centralia.
	Corbett	Miss M. A. Corbett, Sec.	Corbett.
	Crediton	Charles Brown	Crediton.
Tuckersmith	Rodgerville	James Murray, Sec.	Rodgerville.
Turnberry	Bluevale	John Burgess, Sec.	Bluevale.
Wawanosh E.	Belgrave	George Hood, Sec.	Sunshine.
BRUCE:			
Amabel	Wiarton	Geo. H. Johnson, Sec.	Wiarton.
Arran	Tara	John Douglas, Sec	Tara.
Brant	Brant	Daniel Sullivan, Sec.	Malcolm.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
BRUCE—*Con.*			
Brant	Dunkeld	Thos. A. Chisholm, Sec	Dunkeld.
Bruce	Climax	Andrew Kirkconnell, Pres	Tiverton.
	Underwood	Amos Hilker, Sec	Underwood.
Carrick	Belmore	D. M. McDonald, Sec	Belmore.
	Otter Creek	Louis Braun, Sec	Walkerton.
Culross	*Riversdale	J. Lochart	Riversdale.
Elderslie	Elderslie	Isaac McClure, Sec	Williscroft.
Greenock	*Pinkerton	D. Pinkerton	Pinkerton.
Huron	Huron	James Harrison, Pres	Kincardine.
	*Paramount	Joseph Taylor, Sec	Lucknow.
	Pine River	John Thompson, jr	Pine River.
Kincardine	Armow	Wm. A. Shier, Sec	Armow.
	*Bervie	James Glass	Bervie.
	Glammis	W. M. Alton	Tiverton.
	Millarton	Wm. Rutledge, Sec	Millarton.
Kinloss	Holyrood	George McIntosh, Sec	Holyrood.
	Lucknow	J. A. Denning, Prop.	Lucknow.
Saugeen	Burgoyne	T. B. Millar	Burgoyne.
	Star	George S. Webb, Prop	North Bruce.
GREY:			
Artemesia	Flesherton	James Brodie, Sec	Vandeleur.
	Markdale	Henry D. Irwin, Sec	Markdale.
Bentinck	*Hanover Ch. Co.	Andrew Magwood	Hanover.
Holland	Chatsworth	W. A. Ferguson, Sec	Chatsworth.
Normanby	Alsfeldt Ch. & B. Co.	C. H. Peterson, Sec	Clifford.
	Mount Forest	Joseph Tuck, Sec	Mount Forest.
	Varney	Chas. Ramage, Sec	Varney.
Osprey	Badjeros	George Bailey, Treas	Shrigley.
Proton	Dundalk	Robert Russell	Dundalk.
	Ventry	James Cavanagh, Sec	Hopeville.
	Victoria	Wm. Haines, Prop	Inistioge.
SIMCOE:			
Flos	Elmvale	Wm. Harvey, Sec	Elmvale.
Nottawasaga	Avening	W. G. Carruthers, Sec	Avening.
	Glen Huron	James Connor, Sec	Glen Huron.
	Lavender	Samuel Flach, Mgr	Lavender.
Tecumseth	Cookstown	W. F. Moore, Sec	Cookstown.
Tiny	*Lafontaine	Lecamp & Tremeer, Dirs.	Randolph.
MIDDLESEX:			
Adelaide	Kerwood	A. McKenzie, Sec	Kerwood.
	Keyser	Hugh E. Wilson, Prop	Keyser.
	*Victoria	Wm. Dowding	Adelaide.
Biddulph	Cedar Vale	Michael Blake, Sec	Elginfield.
	North Middlesex	George W. Fox, Sec	Lucan.
Caradoc	Caradoc	Wm. E. Sawyer, Sec	Mount Brydges.
	Mount Carmel	D. Leitch, Sec	Strathroy.
	Muncey Road	John Stuart, Sec	Mount Brydges.
Delaware	Delaware	H. J. Smith, Sec	Lambeth.
Dorchester N.	Burnside	S. Barr, Sec	Mossley.
	*Dorchester Station	L. D. Monk	Dorchester Sta.
	Gladstone	W. H. Swales, Sec	Gladstone.
	Gore	James Smith, Mfr.	Crampton.
	Harrietsville	F. Kunz, Sec	Harrietsville.
	Thames	J. A. James, Mfr.	Nilestown.
Ekfrid	Appin	Hector McFarlane, Sec	Glencoe.
	Mayfair	John Cooper, Sec	Melbourne.
London	*Birr	Chas. Robson, Sec	Birr.
	Bryanston, Devizes	Robert Elliott, Sec	Plover Mills.
	Geary	John Geary, Prop	London, Box 132.
	Melrose	W. Ferguson	Ferguson.
	North Branch	Fred Bailey, Sec	Rebecca.
	Proof Lime	James Tier, Sec	Arva.
	Union Hill	R. H. Harding, Sec	Thorndale.
McGillivray	West McGillivray	W. T. Amos, Sec	Lieury.
Metcalfe	Napier	Wm. Ormerod, Mfr	Napier.
	Sifton's	Thos. H. Payne, Sec	Cairngorm.
Mossa	Glencoe	Hector McFarlane, Sec	Glencoe.
Nissouri W.	Blanshard and Nissouri	Fergus McMaster, Sec	St. Marys.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
MIDDLESEX.—*Con.*			
Nissouri W.	Cherry Hill	Hope Webster, Sec	Thamesford.
	Nissouri West	W. Lee, Sec	Thorndale.
Westminster	Belmont	George McKellar, Sec	Belmont.
	Glanworth	R. G. Rose, Sec	Hubrey.
	North Street	H. B. Stephens, Prop	Glanworth.
	*Pond Mills	John McDougal	Lambeth.
	Westminster	A. E. Carrothers, Sec	Pond Mills.
	White Oak	John H. Burnard, Sec	White Oak.
Williams W.	Rob Roy, Parkhill	Wm. Dickson, Sec	Parkhill.
OXFORD:			
Blandford	Bright	John Riesberry, Pres	Bright.
	Eastwood	W. E. Hopkins, Sec	Eastwood.
Blenheim	Soho Ch. & B. Co	J. D. Scott, Sec	Richwood.
Dereham	Brownsville, Culloden, Tilsonburg	Benjamin Hopkins, Sec	Brownsville.
	Dereham and Norwich	Wm. Jones, Sec	Mount Elgin.
	Dereham and W. Oxford	A. R. McNiven, Sec	Ingersoll.
	Lawson's, Salford	J. P. Harris, Sec	Holbrook.
	Mount Elgin	James V. Bodwell, Sec	Mount Elgin.
	*Prouse's	Thos. Prouse, Prop	do
	Verschoyle	James Hunter, Sec	Verschoyle.
	Wilkinson's	J. H. Wilkinson	do
Nissouri E.	Kintore	D. R. Calder, Sec	Kintore.
	Kintore (East branch)	Thos. W. Alderson, Sec	do
	Lakeside	Robert Marshall	Lakeside.
	Murray Bros.	W. C. Murray, Sec	St. Marys.
	*Nissouri	G. A. Sutherland, Sec	Ingersoll.
	Thamesford	David Lawrence, Sec	Thamesford.
Norwich N.	Dunkin's	T. L. Duncan, Sec	Norwich.
	Ontario, Burgesville	I. L. Farrington, Prop	do
	*Smith's	Robert Snell, Sec	do
Norwich S.	Springford	F. C. Anstice, Sec	Springford.
	Summerville	J. B. Addison	Otterville.
Oxford E.	Diamond	J. McConnell	Vandecar.
	Oxford	I. L. Farrington, Prop	Norwich.
	Oxford, East and West	M. S. Schell, Sec	Woodstock.
Oxford N.	Maple Leaf	Thos. Caddey, Prop	Ingersoll.
	Oxford, North	W. H. Sutherland, Sec	Ingersoll (Box111)
Oxford W.	Harris Street	C. E. Cook	Ingersoll.
	Oxford, West	W. G. Francis, Sec	Ingersoll.
Zorra E.	Blandford and Zorra E.	A. Miller, Sec	Walmer.
	German Union	Christian Schrag, Mfr	New Hamburg.
	*Honey Grove	Robert Morton, Prop	Cassel.
	Spring Creek	A. McKay, Sec	Woodstock.
	Strathallan	Absalom Glaves, Sec	Hickson.
	Zorra East Central	Douglas Bruce, Sec	South Zorra.
Zorra W.	Brooksdale	Wm. Matheson, Sec	Brooksdale.
	Cold Springs	Hugh Matheson, Sec	Youngsville.
	Red Star	W. H. Sutherland, Sec	Ingersoll.
	Zorra, West	Wm. Loveys, Sec	Embro.
BRANT:			
Brantford	N. Brant Dairy Ass	Thos. A. Good, Sec	Brantford.
	*Riverside	Robert Sanderson	do
Burford	Cathcart	Chas. Kelly, Sec	Cathcart.
	Harley	I. L. Farrington, Prop	Norwich.
	Kelvin	Joseph McCombs, Sec	Kelvin.
	*New Durham	James Paterson, Sec	New Durham.
Dumfries S.	St. George	John Richardson, Prop	St. George.
Oakland	Oakland	George Taylor	Oakland.
PERTH:			
Blanshard	Blanshard	George B. Webster, Sec	St. Marys.
Downie	Avonbank	Wm. Tier	Motherwell.
	Black Creek	Thos. Ballantyne, M.P.P.	Stratford.
	Downie	H. A. Southwick, Prop	Avonton.
	Gore of Downie	John Dempsey, Prop	Fairview.
	*Kastnerville	Geo. Barthel, Prop	Stratford.
Easthope N.	Avondale	John Wilford, Prop	Shakespeare.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory	Name of Secretary or other Officer.	Post Office Address.
PERTH—*Con.*			
Easthope S.	*Tavistock	Wm. Gillard	Tavistock.
Ellice	Classic	D. A. Dempsey, Prop.	Stratford.
	Ellice	Chas. Stock	Stratford.
Elma	Britton	Wm. Stevenson	Britton.
	Donegal	Samuel McAllister, Prop.	Donegal.
	Elma	Wm. Lochhead, Sec.	Atwood.
	Elmbank	Robert Cleland, Prop.	Listowel.
	Gotham	Joseph Freeman, Sec	Britton.
	Monkton	Andrew Erskine, Sec.	Monkton.
	Newry	John Morrison, Sec.	Newry.
	Silver Corners	Geo. Richmond, Sec.	do.
	Trowbridge	John Adams, Sec.	Trowbridge.
Fullarton	Cold Creek	Thomas Stacey, Sec.	Fullarton.
Logan	*Willow Grove	James Wood	Bornholm.
Mornington	*Milverton	H. Goodhand, Prop	Milverton.
	Newton, Carthage	Hugh Jack, Sec.	Newton.
Wallace	Cedar Grove	George V. Pool, Sec	Wallace.
	Wallace	Jeptha Vankleeck, Sec	Listowel.
WELLINGTON:			
Arthur	Conn	James McLuhan, Sec.	Conn.
	Kenilworth	George Cushing, Sec.	Kenilworth.
Luther W.	Arthur and Luther	John McNab, Sec.	Arthur.
Maryborough	Maryborough	Wm. Wilson, Sec.	Rothsay.
	Riverbank	A. R. McLachlan, Sec.	do.
	Wyandotte	Thos. J. Paterson, Sec.	Moorefield.
Minto	Harriston	W. D. McLellan, Sec.	Harriston.
	Minto and Arthur	James Wiseman, Sec.	Cotswold.
	*Palmerston	George Garbig, Sec.	Palmerston.
Peel	Goldstone	W. T. Whale, Sec.	Gladstone.
	Peel	John Hought, Sec.	Glenallan.
WATERLOO:			
Dumfries N.	Galt	W. P. Clay, Prop	Galt.
Wellesley	Bamberg	Jacob Kaufman, Sec.	Bamberg.
	Honey Grove	J. W. Chambers, Prop.	Poole.
Wilmot	*Oak Grove	C. Schrag, Mfr.	New Hamburg.
	Philipsburg	John D. Schantz, Prop.	Baden.
DUFFERIN:			
Amaranth	Laurel	Jonathan Varcoe, Sec.	Laurel.
	Waldemar	John Johnston, Treas.	Waldemar.
Melancthon	Shelburne	Jacob Walker, Treas.	Shelburne.
LINCOLN:			
Caistor	Caistorville	Adam Spears, Sec.	Caistorville.
Clinton	*Beamsville	Arthur Hunter	Beamsville.
	Campden	H. S. Hummel, Sec.	Campden.
Gainsborough	Bismarck	John L. Heaslip, Sec.	Wellandport.
WENTWORTH:			
Ancaster	Renforth	D. Hamilton, Sec.	Renforth.
Beverley	Beverly	George Paterson, Prop.	West Flamboro.
	*Sheffield	C. W. Laing, Prop.	Sheffield.
PEEL:			
Chinguacousy	Norval	Robert Groat, Prop.	Georgetown.
YORK:			
King	Eversley	Henry Rogers, Sec.	Eversley.
Markham	Cedar Grove	Mrs. J. N. Raymer, Mfr.	Box Grove.
	Ringwood	A. B. Grove	Ringwood.
ONTARIO:			
Whitby E.	Geneva	James Burns, Prop.	Columbus.
DURHAM:			
Cavan	Millbrook	James Brock, Sec.	Millbrook.
Clarke	Newtonville	W. J. Jones	Clarke.
Darlington	Darlington	L. M. Courtice, Salesman	Courtice.
	Hampton	F. L. Ellis, Sec.	Hampton.
Hope	Hope	Wm. Henwood, Sec.	Welcome.
	Perrytown	Fred. Currelley, Sec.	Canton.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
NORTHUMBERLAND:			
Alnwick	Roseneath	Dennis Keogan, Sec	Hastings.
Brighton	Brighton and Murray	Isaac W. Hennessey, Sec	Wooler.
	Cedar Hill	Hugh Strong, Prop	Hilton.
	*Codrington	A. D. Richards, Pres	Codrington.
	Hilton	A. E. Thorne, Sec	Hilton.
	Standard	John Armstrong, Pres	Warkworth.
Cramahe	Castleton	R. R. Philp, Pres	Castleton.
	Cramahe	R. A. Brintnall, Treas	Dundonald.
	Morganston	Homer Platt, Sec	Morganston.
	Salem	S. E. Dixon	Colborne.
Haldimand	Eddystone	George Gillespie, Sec	Vernonville.
	Spring Valley	A. G. McDonald, Prop	Burnley.
	Wicklow	R. J. Rutherford, Sec	Wicklow.
Hamilton	Baltimore, Crown	Samuel Philp, Prop	Baltimore.
	*North Star	John C. Rosevear, Pres	Cold Springs.
Monaghan S	Bensfort	Thomas Dodds, Sec	Bensfort.
Murray	Fountain	Richard Buck	Frankford.
	*Maple Leaf, B	C. W. Wright, Sec	do
	Queen's	W. A. Hendrick, Pres	Stockdale.
	Smithfield	W. H. Potts, Sec	Smithfield.
Percy	Brickley	A. B. German, Sec	Brickley.
	Model	James Oliver, Sec	Warkworth.
	Warkworth	W. T. Wiggins, Sec	do
Seymour	Brae	Gilbert Bedford, Sec	Campbellford.
	Crow Bay	James C. Cleugh, Pres	Sarginson.
	Empire	Robert White, Pres	Campbellford.
	Forest	Alex. Haig, Sec	Menie.
	*I. X. L	John Govan, Pres	Campbellford.
	Meyersburg	Wm. Clark, Sec	Meyersburg.
	Prince of Wales, Valley	John Clark, Sec	Campbellford.
	Rylestone	Arch. Morton, Pres	Springbrook.
	Seymour West	E. C. West, Sec	Campbellford.
	Stanwood	James B. Peoples, Sec	Preneveau.
	Woodland	F. Macoun, Sec	Campbellford.
PRINCE EDWARD:			
Ameliasburg	Brandy Creek	R. N. Hunt, Pres	Murray.
	Mountain View	A. J. Potter, Prop	Mountain View.
	Rednerville	John G. Peck, Pres	Albury.
Athol	Cherry Valley	Luther Platt, Sec	Cherry Valley.
Hallowell	Bloomfield	David S. Hubbs, Sec	Bloomfield.
Hillier	Hillier	Louis P. Hubbs, Sec	Hillier.
Marysburg N	Lake View	G. N. Rose, Sec	Waupoos.
	Union	Robert Davison, Sec	Picton.
Marysburg S	Black Creek	Wm. Call, Sec	Milford.
	Point Traverse	Alva Rose, Sec	South Bay.
	*Royal Street	Walter Striker, Prop	Milford.
Sophiasburg	Ben Gill	Thomas Wright, Sec	Gilbert's Mills.
	*Big Island	Ryerson Rankin	Demorestville.
	*Elm Brook	Mrs. Richard Benson	Picton.
	*Grape Vale	James Roblin	Fish Lake.
	Maple Leaf	Alfred Foster	do
	Northport	Ira David, Pres	Solmesville.
LENNOX AND ADDINGTON:			
Adolphustown	*Adolphustown	Percival Platt	Dorland.
Camden	Camden East	George E. Hinch, Sec	Camden East.
	Centreville	Wm. Whelan, Treas	Centreville.
	Enterprise, Whitman Creek	James Cousins, Auditor	Enterprise.
	Moscow	Vanluven Bros., Props	Moscow.
	Newburgh	George A. Aylesworth, Sec	Newburgh.
Ernesttown	Bath, Union	W. R. Gordanier, Sec	Morven.
	*Empey	P. E. R. Miller, Sec	Switzerville.
	Metzler	L. L. Gallagher, Sec	Wilton.
	Odessa	James C. Fraser, Sec	Odessa.
Fredericksburg N	Napanee	W. N. Dollar, Sec	Napanee.
	Phœnix	Charles B. Parks, Sec	Hay Bay.
Fredericksburh S	Phippen's	Wm. Phippen, Prop	Sandhurst.
	Sillsville	James Rennie	Sillsville.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
LENNOX AND AD.—*Con.*			
Kaladar	Flinton	Thomas Welsh, Mfr	Flinton.
Richmond	Forest Mills	W. J. Sergeant, Sec	Kingsford.
	Selby	Ira B. Hudgins, Sec	Selby.
Sheffield	Clareview	John Garrett, Sec	Erinsville.
	Sheffield	D. E. Rose, Sec	Tamworth.
FRONTENAC:			
Bedford	Fermoy, Salem	John McGuire, Sec	Westport.
	Tichborne	Joseph Kenny, Prop	Tichborne.
Hinchinbrooke	Iron Junction	Joseph Kennedy	Godfrey.
	Parham	David Goodfellow	Parham.
Kennebec	*Arden	W. B. Mills	Arden.
Kingston	*Arigan	Patrick Black	Mt. Chesney.
	*Glenburnie	Robert Vair, Prop	Glenburnie.
	*Glenvale	J. Creamer	Glenvale.
	*Lake Shore	P. E. Ward	Kingston.
	Maple Grove	F. P. Grass, Prop	do
	Pious Hollow	T. A. Keenan, Prop	Mt. Chesney.
	Union	Joshua Knight	Elginburg.
Loughborough	*Forest	John Moreland, Sec	Sydenham.
	Railton	Keely & McAuley	Railton.
Oso	Crow Lake	H. W. Hunt, Sec	Sharbot Lake.
	Perth Road	Wm. Guthrie, Sec	Perth Road.
Pittsburg	Granite Hill	F. J. Henderson, Sec	Pittsferry.
	Keenan & Sons	T. A. Keenan	Mt. Chesney.
	Leo Lake	John P. Bower	Seeley's Bay.
	*Maple Leaf	Thomas Bell	Birmingham.
	Morning Star	Daniel McLean	Eric.
	*Pine Grove	John Dillon	Brewer's Mills.
	Pine Hill	D. Trotter, Sec	Cushendall.
	Rose Hill	James R. Barnes, Sec	Dufferin.
	Woodburn	David Rea	Willetsholme.
Portland	Bellrock	Vanluven Bros., Props	Moscow.
	*Bradshaw	Robert McLean, Sec	Harrowsmith.
	Hartington	Thomas Leonard, Sec	Hartington.
	Verona	Howard Reynolds, Prop	Verona.
Storrington	*Battersea	W. J. Anglin	Battersea.
	*Cold Springs	C. W. Langwith, Sec	Sunbury.
	Duff's	Alexander Ritchie, Sec	Inverary.
	Excelsior	J. L. Keelor, Prop	Battersea.
	*Lake Opinicon	Adam Barr	Inverary.
	Sand Hill	W. W. Sands, Sec	Sunbury.
	*Storrington	L. W. Murphy	Brewer's Mills.
	Sunbury	Gordon Waldron, Sec	Sunbury.
	Washburn	Henry McBroom	Washburn.
Wolfe Island	St. Lawrence	Rattray & Kenny, Props	Wolfe Island.
LEEDS AND GRENVILLE:			
Augusta	Charleville, Grenville, Domville, Central Augusta	J. W. Place, Sec	Prescott.
	*Maple Grove	F. K. Wright, Sec	Algonquin.
	North Augusta	George Neeley	North Augusta.
	Roebuck	James Keating, Sec	Roebuck.
	*St. Lawrence Star	John McLean	Maitland.
	South Branch, Throoptown	Frank Meech, Sec	North Augusta.
	*Victory, No. 1	John S. Ralph	North Augusta.
	Willow	Andrew McNish, Sec	Brockville.
Bastard and Burgess S.	Bresee's	M. F. Bresee, Sec	Philipsville.
	Clear Spring	Alex. Murphy, Sec	Portland.
	Grand Central	E. Bowser, Sec	Delta.
	Myers'	Thomas Myers, Prop	Forfar.
	People's Mutual	Thomas G. Morris	do.
	Philipsville	L. N. Phelps, Sec	Philipsville.
	Plum Hollow	Andrew Derbyshire, Sec	Plum Hollow.
	Poole's	Wm. N. Poole, Mfr	Freeland.
	Reliable	Rogers & Co., Prop	Newboyne.
	Smith's Valley	R. A. Sheldon, Sec	Harlem.
Crosby N.	Ardmore, Westport	John McGuire, Sec	Westport.
	Centreville, Model	T. C. Singleton, Prop	Newboro'.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
LEEDS AND GREN.—*Con.*			
Crosby S	Clear Lake Union	George Leggett	Singleton.
	Dominion	E. V. Halladay, Prop	Elgin.
	Maple Grove	S. M. Halladay, Mfr	do.
	Morton	R. H. Somerville, Mfr	Morton.
	Rockdale, Elgin Model	J. R. Dargavel, Sec	Elgin.
	Singleton	T. C. Singleton, Prop	Newboro'.
Edwardsburg	Cardinal	Alex. Smith, Sec	Cardinal.
	Glensmail, (Eager's)	R. J. Bennett, Sec	Glensmail.
	Johnstown, (Eager's)	L. Rooney, Sec	Prescott.
	Lime Kiln	Wm. Gore, Sec	do.
	Mainsville	William Eager, Prop	Morrisburg.
	Millar's, Nos. 1, 2 and 3	Millar & Ferguson, Props	Spencerville.
	Shanley, (Eager's)	George Anderson, Sec	Shanley.
	*Thompson's, No. 1	W. H. Thompson, Prop	Prescott.
	Thompson's, No. 4	A. D. VanCamp, Sec	do.
Elizabethtown	Anvern	A. C. Johns, Prop	Fairfield, East.
	Barlow	C. L. McCready, Sec	Addison.
	*Excelsior	R. McNish	Brockville.
	Glen Buell	C. J. Gilroy, Sec	Glen Buell.
	*Leeds Union	L. Shipman, Sec	Lyn.
	Maple Grange	Joshua Gilroy	do.
	Orchard Valley	James White, Prop	Jellyby.
	*Palace	Cyrenus Stowell, Sec	Addison.
	Rockspring	W. C. Tackabery	Rockspring.
	Royal Dominion	T. W. Horton	New Dublin.
	*Smith's	Thomas Smith	Greenbush.
	*Star	M. K. Evertt, Prop	Easton's Corners.
Elmsley S	Lombardy	Michael O'Mara	Lombardy.
Gower S	Hickston	Wm. Eager, Prop	Morrisburg.
Kitley	Farmer's Choice	Fred W. Scovill	Athens.
	Farmer's Friend	Charles Rudd, Sec	Frankville.
	Glen Elm	Hugh A. Hunter, Sec	Smith's Falls.
	Newbliss	John Mackay, Sec	Newbliss.
	*Robinson	Alex. Cameron	Smith's Falls.
	Silver Creek	George S. Stratton, Sec	Toledo.
Leeds and Lansdowne.	Bay	Robert Wilson, Sec	Wilstead.
	Birmingham's Cheddar	James Birmingham	South Lake.
	Bruce	James Keating, Sec	Lansdowne.
	Cold Glen	J. Willoughby, Prop	Ellisville.
	Deerlick	John Cowan	Lansdowne.
	*Dulcemain	Wm. Sliter	Warburton.
	*Fairfax	John A. Heaslip	Sand Bay.
	Gananoque, Lorne	James Donevan, Sec	Gananoque.
	*Gananoque Junction	John Conner	do.
	Lake View	W. H. Pierce, Sec	Ellisville.
	Lyndhurst	Henry Green, Prop	Lyndhurst.
	Oak Leaf	M. J. Johnson, Treas	Oak Leaf.
	*Rapid Valley	C. A. Bradley	Lansdowne.
	St. Lawrence	George E. Godkin, Sec	Waterton.
	Sand Bay	Benj. Herbison, Sec	Sand Bay.
	Seeley's Bay	R. Gardiner, Prop	Seeley's Bay.
	Springvale	B. H. Brown, Sec	Morton.
	Tilley	James W. Grier, Sec	Lansdowne.
	Warburton	John Cook, Sec	Warburton.
	Washburn	L. H. Washburn, Sec	Soperton.
Oxford on Rideau	Anderson's	John Anderson, Prop	Oxford Mills.
	Bishop's Mills	Albert Alexander, Sec	Bishop's Mills.
	Brown's Bridge	Wm. Eager, Prop	Morrisburg.
	Graham	Joseph Carson, Sec	Millar's Corners.
	*Kemptville	Orlando Bush, Sec	Kemptville.
	*Oxford Mills	Levi Patton, Sec	Oxford Mills.
Wolford	Old Fairfield	Rufus Bissell, Sec	Easton's Corners.
	Rideau Valley	John Kerr, Sec	Merrickville.
Yonge and Escott	Caintown	James White, Sec	Caintown.
	*Edgeley's	M. J. Connolly, Sec	do.
	Elbe	Bates & Brown, Props	Elbe Mills.
	Escott Union	W. H. Warren, Sec	Rockfield.
	Farmersville	L. A. Brown, Prop	Athens.
	Holland	H. C Lynch, Sec	Escott.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretery or other Officer.	Post Office Address.
LEEDS AND GREN.—*Con.*			
Yonge and Escott	*Junetown, A.	James Herbison, Salesman	Caintown.
	Junetown, B.	Alvin Avery, Sec	do.
	Leeds County	Terrence Purvis, Sec	Yonge Mills.
	Lillie Springs	R. W. Littlejohn, Pres	Caintown.
	*Mallory's	A. W. Mallory	Mallorytown.
	*Mallorytown Union	David Forester, Sec	do.
	Ronan's	J. K. Redmond, Sec	Athens.
	Springfield Union	N. E. Mallory, Sec	Escott.
DUNDAS :			
Matilda	Advance, No. 2	Thomas Scott, Sec	Glen Stewart.
	Dundela	John W. Cooper	Dundela.
	Farmer's	G. A. Burnside, Sec	Iroquois.
	Iroquois, Maple Grove	James McCullough, Prop	do.
	Model, No. 1	E. A. Roode, Prop	Hulbert.
	Morrisburg	Wm. Eager, Prop	Morrisburg.
	Morrisburg	C. E. Robertson, Sec	do.
	*Rowena, (Eager's)	R. M. Bouck, Sec	Irena.
	*Thompson's, No. 3	S. W. Wood	Dixon's Corners.
	*Thompson's, No. 6	W. H. Thompson, Prop	Prescott.
Mountain	*Advance, No. 1	Edward Scott, Prop	Heckston.
	Rose & Co., Nos. 1 and 3	John McTavish, Sec	VanCamp.
	South Mountain	Wm. Eager, Prop	Morrisburg.
Williamsburg	Archer	G. C. Tracy, Sec	Archer.
	Caughnawaga	Wm. Eager, Prop	Morrisburg.
	Dunbar	Isaiah Barkley	Dunbar.
	*East Williamsburg	C. D. Castleman	Morrisburg.
	*Elma, *Colquhoun *Glen Becker, *Grantley	John N. Logan	Elma.
	Hoasic	Thomas McDonald, Prop	Morrisburg.
	North Williamsburg	James Dickey, Sec	N. Williamsburg.
	Riverside, (Eager's)	B. H. Hayunga, Sec	Morrisburg.
Winchester	Cassbridge Creamery	D. Halliday, Sec	Cassbridge.
	Chesterville	Thos. McDonald, Prop	Morrisburg.
	Chesterville, Connaught Ormond, Winch't'r Springs	Wm. Eager, Prop	do.
	Kendrick and Carlyle	W. R. Allison, Sec	Dunbar.
	*Morewood	John McCormick	Morewood.
	Rose & Co., No. 2	John McTavish, Sec	VanCamp.
	Union, (co-operative)	George Carlyle, Sec	Morewood.
STORMONT :			
Cornwall	Black River, Nos. 1, 2 and 3.	P. N. Tait, Prop	Mille Roches.
	*Cornwall Centre	A. E. Cline, Sec	Eamer's Corners.
	Grant's Corners	Wm. Irvine, Prop	Cornwall.
	Mille Roches	P. N. Tait, Sec	Mille Roches.
	Moulinette	D. J. McGilles, Sec	Moulinette.
	*Silmser's Corners	W. S. Friend, Sec	Cornwall.
Finch	Berwick, No. 1 and 2	James Small, Prop	Berwick.
	Cahore	Wm. Eager, Prop	Morrisburg.
	Crysler	F. Richards, Sec	Crysler.
	Goldfield Comb. (3)	C. H. Wood, Prop	Goldfield.
Osnabruck	*Dickenson Landing	Chas. S. Baker	Wales.
	Dixson	J. C. Stata, Sec	Lunenburg.
	Farran's Point	J. R. Farran, Sec	Farran's Point
	Goldfield Comb. (3)	C. H. Wood, Prop	Goldfield.
	Lunenburg	H. McEwan, Sec	Lunenburg.
	North Osnabruck	Gordon Baker	Osnabruck Centre
	White Clover	George H. Jackson, Sec	Gallingertown.
Roxborough	*Allangrove Comb. (2)	D. M. Macpherson, Prop	Lancaster.
	Berwick, No. 3	James Small, Prop	Berwick.
	Gravel Hill	O. Fulton, Salesman	Avonmore.
GLENGARRY :			
Charlottenburg	Allangrove Comb. (9)	D. M. Macpherson, Prop	Lancaster.
	Camerontown, Tyotown	Thos. McDonald, Prop	Morrisburg.
	Fraser's Point	D. A Fraser, Sec	South Lancaster.
	Martintown or Lilly White.	W. Irvine, Prop	Cornwall.
Kenyon	Allangrove Comb. (5)	D. M. Macpherson, Prop	Lancaster.
	*Greenfield	J. J. Cameron, Sec	Greenfield.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
GLENGARRY.—*Continued.*			
Lancaster	Allangrove Comb. (4)	D. M. Macpherson, Prop.	Lancaster.
	*Glen Norman, *Dalhousie Mills	James Irvine	Dalkeith.
	Pine Grove (Thistle Brand)	R. J. McArthur	N. Lancaster.
Lochiel	*Dalkeith, *McCormick, *McCrimmon	James Irvine	Dalkeith.
	E. Hawkesbury, No. 3	James Hurley, Sec	Barb.
	*Gauthier's Bridge	D. A. McDonald	Alexandria.
	*Spring Creek Comb. (7)	W. D. McLeod, Prop.	Kirkhill.
PRESCOTT:			
Alfred	Alfred	F. W. Langrell, Sec.	Alfred.
	Daoust	Gatien Parisien, Sec.	do.
	Dubois	Onesime Dubois	Lefaivre.
Caledonia	Molloy's	James Proudfoot, Sec	Fenaghvale.
Hawkesbury	E. Hawkesbury, Nos. 1 & 2	James Hurley, Sec	Barb.
	Hawkesbury	W. H. Byers, Pres	Hawkesbury.
	Maple Leaf	J. C. McAlpine, Sec.	St. Ann du Prescott.
	Maple Leaf, No. 1	Amèdè Leroux	St. Eugene.
	Maple Leaf, No. 2	Joseph Seguin	Point Fortune.
	*Monolea, No. 1	James Ross	Little Rideau.
	*Monolea, No. 4	John W. Ross	do.
	*Spring Creek Comb. (7)	McCuaig, Cheney & Co. Props	Vankleek Hill.
	Spring Grove	S. N. Morrison, Prop.	Henry.
	Vankleek Hill	D. C. McKinnon	Vankleek Hill.
	*One factory	John McNish	do.
	* do.	Wm. Wyman	Chute à Blondeau.
	do.	Joseph Vachon, Prop	Mongenais.
Longueuil	Cassburn	R. H. Marston, Sec.	Cassburn.
Plantagenet	Fournier	Stephen Surch, Sec.	Fournier.
	Pendleton	Henry Moffatt, Prop.	Pendleton.
	Riceville, Burnside	A. McLean, Sec	Riceville.
	St. Isidore	N. Parent, Prop	St. Isidore.
	Star	John McCrank, Sec.	Curran.
	Treadwell	A. H. Chessar, Sec	Plantagenet.
RUSSELL:			
Cambridge	Clarence	Damase Meilleur	Clarence.
	*St. Albert	Louis Genier	St. Albert.
Clarence	The Brook	Joseph Menard, Sec.	The Brook.
	The Lake	Dr. A. DesRosiers	Clarence Creek.
Cumberland	Russell, Nos. 1, 2 and 3	W. A. Munroe	Navan.
Russell	Felton	Wm. Eager, Prop.	Morrisburg.
	*Ridge, No. 1	D. McDiarmid	St. Onge.
CARLETON:			
Fitzroy	River View	John Stevenson, Prop.	Kinburn.
	Union Pride	John Tierney, Sec.	Arnprior.
Goulbourn	Golden	Henry Vaughan, Sec.	Stapledon.
	Ottawa Valley	Adam Abbott, Sec	Hazledean.
Gower N.	Kars	Wm. Eager, Prop.	Morrisburg.
Huntley	*North Gower, *Carp	Edward Kidd, Prop	North Gower.
March	*Dunrobin	J. J. Younghusband, Sec.	Dunrobin.
Marlborough	*Burritt's Rapids	Edward Kidd, Prop.	North Gower.
Nepean	Fallowfield		
Osgoode	Kenmore, Marvelville, Osgoode, Richmond	Wm. Eager, Prop.	Morrisburg.
	*Lorne	John Campbell	Dalmeny.
	*Manotick	Edward Kidd, Prop.	North Gower.
	Osgoode, No. 10	A. Walker, Sec.	Metcalfe.
	*Osgoode, No. 12	H. D. York.	do.
	*White Globe, No. 2	G. M. Donaldson	Vernon.
	White Globe, No. 3	John McCaul, Sec.	do.
RENFREW:			
Horton	Maple Home	Robert McLaren, Sec.	Renfrew.
Ross	Forester's Falls	Wm. Grant, Prop.	Forester's Falls.
Wilberforce	Rankin, Wilberforce	Thos. Leech, Prop.	Rankin.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
LANARK:			
Bathurst	*Bathurst	Thomas Radford	Elliott.
	*Fallbrook	Walter Cameron	Fallbrook.
	Harper	Joseph Warren, Sec.	Harper.
	Scotch Line	Samuel Wilson	Allan's Mills.
Beckwith	Beckwith	Thomas Nesbitt, Sec.	Carleton Place.
	Valley Queen	Peter McEwen, Sec.	Franktown.
Dalhousie	Watson's Corners, Brookside	W. A. Moore, Sec.	Perth.
Drummond	Balderson	Andrew Allan, Sec	Balderson.
	Dexter	Donald McPhail, Sec.	McPhail.
	Drummond Centre	Wm. J. McCreary, Sec	Innisville.
	Mississippi, Riverside	C. A. Matheson, Sec	Perth.
Elmsley N.	Lone Star	B. S. Snider, Sec	Port Elmsley.
Lanark	Boyd's, No. 1	Alfred Hammond, Sec.	Innisville.
	Fairplay	Thomas Jackson, Sec	do.
	Hopetown	John Stewart, Sec.	Hopetown.
	Middleville	A. R. McIntyre, Sec.	Middleville.
Montague	Cedar Grove	Colin McNabb, Sec.	Smith's Falls.
	Roseville	Hugh Clark, Sec.	Montague.
	Thompson's No. 7	Robert Eamer, Sec	Smith's Falls.
Pakenham	Pakenham	B. B. Dunnet	Pakenham.
Ramsay	Mississippi Pride	James Robertson, Sec.	Almonte.
	Rosedale	Alfred James, Sec.	Clayton.
Sherbrooke S	Lake View	John McGuire, Sec.	Westport
VICTORIA:			
Eldon	Kirkfield	S. Truman, Sec.	Kirkfield.
	Lorneville	John A. Jackson, Sec.	Lorneville.
Emily	Downeyville	J. C. Lucas	Downeyville.
Fenelon	Cambray	H. J. Lytle	Cambray.
	Fenelon Fal's	F. Sandford, Prop.	Fenelon Falls.
Mariposa	Little Britain	Owen Yearsley, Prop.	Little Britain.
	Mariposa	David Rogers, Sec.	Linden Valley.
Ops	Reaboro'	J. A. Brown	Reaboro'.
Verulam	Bobcaygeon	I. L. Read, Sec	Bobcaygeon.
	Star	Morgan Johns, Sec	do.
PETERBOROUGH:			
Asphodel	*Norwood	Wm. Buck	Norwood.
	Ormond	James O'Reilly, Sec.	Hastings.
	Westwood	John Lancaster, Sec.	Westwood
Belmont.	Melrose Abbey	Samuel Elliott, Sec.	Norwood.
	Round Lake	D. T. Young, Pres.	Rush Point
	Star	James B. Peoples, Sec.	Preneveau.
	Trentbridge	Wm. Johnston, Pres.	Trentbridge.
Douro	Maple Leaf	David Pilkey, Sec	Peterborough.
	Pine Grove	E. J. Abbott, Sec.	Lakefield.
Dummer	*South Dummer	S. S. Spence	Cottesloe.
	Warminster	S. R. Payne, Sec	Warsaw.
	Warsaw	Wm. F. Darling	do
Ennismore	*Myrtle	R. J. Scollard	Ennismore.
Otonabee	Keene	George Mather, Sec.	Keene.
	Otonabee Union	George Stewart, Sec.	Peterborough.
	Peterborough	Wm. Girvin, Sec	do.
	Shearer	John Miller, Sec.	Lang.
Smith	Central Smith	James Tindle, Sec.	Peterborough.
	Cherry Grove	P Robinson, Sec	Bridgenorth.
	Lakefield	J. W. Moore, Prop.	Lakefield.
	Missing Link	James Middleton, Sec.	Peterborough
	North Smith	M. E. Sanderson, Pres.	Selwyn.
HALIBURTON:			
Cardiff	Deer Lake	Alfred W. Willis, Sec.	Deer Lake.
Dysart	Dysart	Edward Holmes	Haliburton.
	Haliburton	George Bemister, Sec.	do.
Minden	*Minden	M. Brown, Sec.	Minden.
Monmouth	*Monmouth	J. H. Anderson	Wilberforce.
Stanhope	Stanhope	Jospeh Beatty	Boskung.
HASTINGS:			
Carlow and Mayo	Carlow	Andrew Whyte, Sec.	Boulter.
	Carlow and Mayo Union	W. J. Douglas, Pres.	Fort Stewart.

CHEESE FACTORIES IN ONTARIO.—*Continued.*

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
HASTINGS:—*Continued.*			
Dungannon	Bancroft	Fred. Mullett, Pres	Bancroft.
	L'Amable	J. R. Tait, Sec	L'Amable.
	Walkerville	D. Kavanagh, Pres	Umfraville.
Elzevir	Bridgewater, Elzevir	Wm. Wiggins, Pres	Queensborough.
Herschel	Maynooth	John M. Third, Sec	Maynooth.
Hungerford	Bogart	Peter Labarge, Pres	Bogart.
	*Cedar	Andrew Kirk	Chapman.
	Kervine	Patrick Murphy, Pres	Stoco.
	Marlbank	Wm. Burley, Sec	Marlbank.
	Moneymore	John Thompson, Sec	Moneymore.
	Roblin	James Clare, Pres	Chapman.
	Thomasburg	E. Elliott, Sec	Thomasburg.
	*Tweed	Thomas Graham, Pres	Tweed.
	Victoria	Robert Gordon, Pres	do.
Huntingdon	Beulah	Martin Baker, Pres	Ivanhoe.
	Daisy	John O'Reilly	Madoc.
	Glen	Samuel Ray, Pres	Fuller.
	Moira	W. H. Morton, Pres	Moira.
	*West Huntingdon	James Haggerty, Pres	West Huntingdon
	White Lake	Hector Wood, Pres	Ivanhoe.
Madoc	Allen Settlement	W. J. Allen, Pres	Cooper.
	Alexandria	John Caskey, Pres	Madoc.
	*Brook Valley	Thomas Burnside	do.
	Cold Spring	A. M. Ketcheson, Pres	do.
	Golden	James English, Pres	do.
	Spring Creek	Wm. Thompson, Pres	Remington.
Marmora	Spring Hill	D. McKenzie	Madoc.
	Deloro	Ralph Laycock, Pres	Deloro.
Monteagle	Marmora, Cook	Wm. Hilton, Pres	Marmora.
	Greenview	Mrs. Edward Leveck, Sec	Greenview.
	Hybla	George A. Bartlett, Pres	Hybla.
Rawdon	*Diamond	Alex. Johnston	Stirling.
	Enterprise	James W. Butler, Pres	Sine.
	Evergreen	Robert Lanigan, Pres	Stirling.
	Harold	John Tanner, Pres	Harold.
	Maple Leaf	Wm. Meiklejohn, Pres	Big Springs.
	Plum Grove	Thomas Walker, Pres	Wellman'sCorners
	Springbrook	Thomas J. Thompson, Pres	Springbrook.
	*Stirling	Hiram Conley, Pres	Stirling.
Sidney	Bay View	R. J. Graham, Sec	Belleville.
	Frankford	Joshua Anderson	Frankford.
	Front of Sidney	A. P. Meyers, Salesman	Trenton.
	Grove	A. B. Mallory, Pres	Frankford.
	Johnstown	E. Harry, Sec	Glen Miller.
	Shamrock	Oakley Vandervoort, Pres	Stirling.
	Sidney	J. R. Brower, Pres.	Belleville.
	*Sidney Town Hall	S. T. Wilmott, Pres,	Wallbridge.
	Springfield	W. H. Knox, Pres	Trenton.
Thurlow	Ashley	Harford Ashley, Sec	Belleville.
	Bronk	James Boldrick, Pres	Canifton.
	East Hastings	W. A. Chapman, Sec	Roslin.
	Halloway	P. R. Daly, Pres	Foxboro'
	Thurlow	O. R. Weese, Pres	Belleville.
	Union	F. Brenton, Pres	Corbyville.
	Zion	Wm. Sills, Sec	Foxboro'.
Tyendinaga	Albert	Michael Corrigan, Pres	Albert.
	Gould's Cheddar	Peter Gould, Sec	Napanee.
	Melrose	A. J. McLaren	Melrose.
	Mountain	R. L. Lazier, Pres	Shannonville.
	Read	John D. Naphan	Naphan.
	Rosebud	Alex. Coulter, Sec	Myrehall.
	Shannonville	Wm. Clazie, Pres	Belleville.
Wollaston	Coe Hill	R. S. Tivy, Pres	Coe Hill.

CREAMERIES IN ONTARIO IN 1890.

County and Township.	Name of Creamery.	Name of Secretary or other Officer.	Post Office Address.
ESSEX:			
Mersea	*Leamington	Sloan & Bruner, Props.	Leamington.
KENT:			
Raleigh	Cedar Springs	Taylor & Williamson	Cedar Springs.
LAMBTON:			
Plympton	Wanstead	Arch. Wark	Wanstead.
HURON:			
Goderich	Goderich (Town).	John Hannah, Prop	Seaforth.
Hullett	*Londesborough	George Watt, Pres.	Londesborough.
McKillop	Seaforth (Town)	John Hannah, Prop	Seaforth.
Tuckersmith	Brucefield	Hugh McCartney	Brucefield.
BRUCE:			
Brant	*Elmwood	John Dirstine, Sec.	Elmwood.
	Walkerton (Brills)	George Balkwill, Mgr	Walkerton.
Carrick	Mildmay	John Henderson	Mildmay.
Culross	Formosa	Sebastian Gfroerer, Sec	Formosa.
	Teeswater	S. R. Brill, Sec.	Teeswater.
Elderslie	Chesley	Isaac Wenger, Prop	Ayton.
	Dobbinton	Wm. Harris	Dobbinton.
Kinloss	Whitechurch	John J. W. Simpson	Whitechurch.
GREY:			
Derby	Rock Spring	Wm. Gladstone	Owen Sound.
Egremont	Dromore	John Philp, Sec	Dromore.
	Holstein	David Allan, Sec	Holstein.
Glenelg	Durham	A. Davidson, Sec	Durham.
Normanby	Ayton	Isaac Wenger, Prop	Ayton.
	Saugeen Valley	John B. Ashley, Sec	Neustadt.
Sydenham	Pleasant Vallley	James Struthers, Prop	Owen Sound.
MIDDLESEX:			
London	†Medway	Jas. Carmichael	Arva.
PERTH:			
Blanshard	Kirkton	John Hannah, Prop	Seaforth.
WELLINGTON:			
Guelph	Agricultural College	President of College	Guelph.
WATERLOO:			
Waterloo	*Breslau	M. Brubacher	Breslau.
Wellesley	Cross Hill	John T. Wilford, Sec	Cross Hill.
Wilmot	†Nith Valley	Henry D. Tye, Sec	Haysville.
Woolwich	St. Jacobs	Isaac Hilborn, Sec	Elmira.
DURHAM:			
Cartwright	Cedar Grove	Robert Philp, Prop	Cadmus.
PRINCE EDWARD:			
Ameliasburg	†Sprague	John Sprague, Salesman	Ameliasburg.
	*Willow Glen	McAuley & Miller	Picton.
LEEDS AND GRENVILLE:			
Edwardsburg	Ventnor	Millar & Ferguson, Props.	Spencerville.
Yonge	Twin Elms	C. Johnson & Son, Props	Athens.
DUNDAS:			
Matilda	*Banford & Johnston	A. Steinbury	Hainsville.
	Rutherford	Richard Gibbons, Sec	Irena.
STORMONT:			
Osnabruck	†Stormont	Jonn H. Croil	Aultsville.
GLENGARRY:			
Charlottenburg	Gore	Abrams & McLennan, Props.	Camerontown.
RUSSELL:			
Russell	*St. Onge	Mr. Dupuis	St. Onge.

† Makes both butter and cheese.

STATISTICS OF

LIVE STOCK AND DAIRY PRODUCTS.

HORSES AND HOGS.

TABLE I. Showing by County Municipalities and groups of Counties the numbers of Horses and of Hogs in Ontario in the years 1889 and 1890.

Counties.	Horses.					Hogs.			
	Working horses.	Breeding mares.	Unbroken horses.	Totals.		Over 1 year.	Under 1 year.	Totals.	
				1890.	1889.			1890.	1889.
Essex	8,079	4,405	6,570	19,054	15,744	15,283	44,298	59,581	55,724
Kent	9,784	5,214	8,062	23,060	20,033	11,597	58,908	70,505	59,422
Elgin	7,381	3,355	5,691	16,427	15,121	7,511	38,964	46,475	34,660
Norfolk	6,261	2,661	4,659	13,581	12,896	6,275	27,821	34 096	26,643
Haldimand	5,468	2,453	4,262	12,183	11,230	3,518	15,785	19,303	13,264
Welland	5,421	1,410	3,099	9,930	9,951	2,548	10,127	12,675	7,302
Totals	42,394	19,498	32,343	94,235	84,975	46,732	195,903	242,635	197,015
Lambton	8,213	3,416	6,608	18,237	15,638	5,547	23,503	29,050	17,972
Huron	12,786	7,311	11,255	31,352	29,439	7,860	35,829	43,689	30,679
Bruce	10,239	4,888	7,502	22,629	21,673	7,630	27,137	34,767	24,445
Totals	31,238	15,615	25,365	72,218	66,750	21,037	86,469	107,506	73,096
Grey	13,143	5,892	8,461	27,496	26,993	9,664	36,858	46,522	33,495
Simcoe	13,186	5,275	7,740	26,201	25,862	9,228	39,878	49,106	40,609
Totals	26,329	11,167	16,201	53.697	52,855	18,892	76,736	95,628	74,104
Middlesex	14,653	6,818	10,940	32,411	29,399	8,883	45,514	54,397	39,863
Oxford	9,839	3,583	5,696	19,118	19,480	5,764	35,049	40,813	31,021
Brant	5,331	1,668	3,155	10,154	10,438	2,619	16,005	18,624	14,108
Perth	8,947	4,745	7,044	20,736	20,410	5,496	29,740	35,236	25,364
Wellington	11,527	5,187	7,434	24,148	23,024	7,559	39,688	47,247	32,556
Waterloo	7,093	2,482	3,796	13,371	12,916	3,350	20,373	23,723	15,041
Dufferin	4,961	1,996	2,746	9,703	8,658	3,376	15,894	19,270	13,491
Totals	62,351	26.479	40,811	129,641	124,325	37,047	202,263	239,310	171,444
Lincoln	5,138	1,535	2,987	9,660	9,232	2,116	11,748	13,864	9,659
Wentworth	7,500	2,245	4,293	14,038	13,224	3,388	17,662	21,050	13,671
Halton	5,188	1,578	2,834	9,600	8,582	2,293	13,964	16,257	8,342
Peel	6,742	2,638	4,388	13,768	12,924	3,732	19,859	23,591	18,240
York	13,220	5,835	8,227	27,332	25,390	7,354	41,611	48,965	37.913
Ontario	8,891	5,140	7,602	21,633	19,089	6,274	27,096	33,370	24,756
Durham	7,722	2,855	4,705	15,282	14,802	4,479	16,582	21,061	14,035
Northumberland	9,139	2,783	5,250	17,172	17,114	4,763	17,338	22,101	16,712
Prince Edward	5,691	2,336	4,059	12,086	11,194	1,931	8,795	10,726	4,905
Totals	69,231	26,995	44,345	140,571	131,551	36,330	174,655	210,985	148,233
Lennox & Addington	5,072	2,090	3,908	11,070	9,649	2,626	8,783	11,409	7,733
Frontenac	5,660	1,599	2,824	10,083	9,065	3,178	9,284	12.462	7,732
Leeds and Grenville	11,662	2,995	5,336	19,993	19,418	8,605	21,382	29,987	18,995
Dundas	4,368	1,426	2,553	8,347	8,066	4,162	6,774	10,936	9,154
Stormont	3,511	1,555	2,661	7,727	7,473	2,928	5,131	8,059	6,765
Glengarry	4,742	2,192	3,130	10,064	9,195	3,842	6,826	10,668	7,355
Prescott	3,551	1,544	2,730	7,825	7,648	4,188	5,509	9,697	8,863
Russell	2,603	1,082	1,573	5,258	4,816	2,892	4,535	7,427	4,669
Carleton	7.475	3,166	4,202	14,843	14,257	5,455	16,025	21,480	15,791
Renfrew	6,556	2,649	4,031	13,236	11,663	8,223	11,181	19,404	15,364
Lanark	6,105	1,740	2,668	10,513	10,000	3,810	11,284	15,094	13,224
Totals	61,305	22.038	35,616	118,959	111,250	49,909	106,714	156,623	115,645
Victoria	6,165	2,936	4,557	13,658	12,565	4,444	17,659	22,103	14,352
Peterborough	5,880	1,800	2,994	10,674	10,277	6,197	14,674	20,871	13,971
Haliburton	668	294	296	1,258	1,055	792	1,713	2,505	1,434
Hastings	9,478	2,833	5,900	18,211	18,238	7,719	22,001	29,720	18,654
Totals	22,191	7,863	13,747	43,801	42,135	19,152	56,047	75,199	48,411
Muskoka	1,264	563	599	2,426	2,452	1,042	3,030	4,072	2,824
Parry Sound	841	378	396	1,615	995	750	2,201	2,951	1,686
Nipissing	316	78	66	460	.....	283	576	859	.....
Algoma	1,000	479	534	2,013	1,507	1,020	3,771	4,791	3,011
Totals	3,421	1,498	1,595	6,514	4,954	3,095	9,578	12,673	7,521
The Province	318,460	131,153	210,023	659,636	618,795	232,194	908,365	1,140,559	835,469

CATTLE.

TABLE II. Showing by County Municipalities and groups of Counties the number of Cattle in Ontario in the years 1889 and 1890.

Counties.	Working oxen.	Milch cows.		Store cattle over 2 years.	Young and other cattle.	Totals.	
		1890.	1889.			1890.	1889.
Essex	247	14,600	13,760	9,030	16,343	40,220	37,382
Kent	84	18,311	18,699	13,494	24,487	56,376	57,647
Elgin	264	18,608	18,166	9,239	20,034	48,145	47,417
Norfolk	472	14,031	15,969	3,481	11,749	29,733	33,079
Haldimand	118	12,231	12,110	4,077	11,521	27,947	28,807
Welland	312	8,739	8,890	2,804	8,350	20,205	20,069
Totals	1,497	86,520	87,594	42,125	92,484	222,626	224,401
Lambton	63	18,693	17,573	17,532	27,327	63,615	59,935
Huron	167	29,431	30,256	31,619	43,503	104,720	107,534
Bruce	681	26,566	27,748	19,897	36,257	83,401	83,467
Totals	911	74,690	75,577	69,048	107,087	251,736	250,936
Grey	996	32,465	34,308	22,367	47,510	103,338	102,179
Simcoe	563	23,816	24,811	14,075	28,983	67,437	70,348
Totals	1,559	56,281	59,119	36,442	76,493	170,775	172,527
Middlesex	98	35,864	36,396	28,292	44,310	108,564	105,039
Oxford	151	35,194	34,775	12,007	23,519	70,871	67,602
Brant	67	10,584	10,415	3,197	9,846	23,694	23,799
Perth	110	26,137	26,178	15,380	31,381	73,008	76,243
Wellington	161	24,635	26,107	16,365	33,265	74,426	79,000
Waterloo	116	13,728	14,755	4,819	14,927	33,590	36,172
Dufferin	107	9,501	9,629	7,360	13,138	30,106	30,052
Totals	810	155,643	158,255	87,420	170,386	414,259	417,907
Lincoln	135	7,506	8,620	2,738	6,588	16,967	18,913
Wentworth	78	13,679	13,534	3,138	10,556	27,451	29,532
Halton	44	10,162	9,599	4,956	9,470	24,632	25,580
Peel	69	11,558	12,538	4,900	10,000	26,527	29,172
York	78	21,971	20,973	6,988	14,120	43,157	46,765
Ontario	95	15,832	16,320	8,506	22,436	46,869	48,932
Durham	96	10,912	12,326	5,358	13,174	29,540	34,525
Northumberland	146	19,959	21,191	4,588	13,928	38,621	42,917
Prince Edward	40	10,064	8,901	1,323	6,800	18,227	16,878
Totals	781	121,643	124,002	42,495	107,072	271,991	293,214
Lennox and Addington	152	14,671	12,680	3,584	10,407	28,814	25,889
Frontenac	442	16,675	15,505	4,689	13,998	35,804	29,875
Leeds and Grenville	68	45,597	45,401	5,817	22,803	74,285	71,840
Dundas	.....	16,756	17,841	2,252	7,196	26,204	28,482
Stormont	.....	15,824	15,471	2,539	7,653	26,016	24,086
Glengarry	.....	19,319	18,375	1,710	10,023	31,052	30,101
Prescott	.....	11,999	13,027	2,404	7,357	21,760	21,889
Russell	.....	7,053	5,925	2,550	6,300	15,903	12,964
Carleton	16	24,123	23,587	7,251	16,166	47,556	46,849
Renfrew	101	17,886	16,823	7,770	21,842	47,599	40,530
Lanark	19	19,587	18,553	7,071	17,808	44,485	41,533
Totals	798	209,490	203,188	47,637	141,553	399,478	374,038
Victoria	133	11,935	12,297	6,337	14,999	33,404	36,138
Peterborough	340	14,527	14,728	4,377	12,002	31,246	33,820
Haliburton	355	2,622	2,405	1,083	3,484	7,544	6,158
Hastings	1,093	33,296	33,379	6,309	19,013	59,711	56,812
Totals	1,921	62,380	62,809	18,106	49,498	131,905	132,928
Muskoka	676	4,471	4,511	1,559	5,178	11,884	12,784
Parry Sound	488	2,785	1,918	1,166	3,941	8,380	5,715
Nipissing	112	738	.....	359	811	2,020	.....
Algoma	614	3,197	2,198	1,283	4,564	9,658	7,449
Totals	1,890	11,191	8,627	4,367	14,494	31,942	25,948
The Province	10,167	777,838	779,171	347,640	759,067	1,894,712	1,891,899

SHEEP AND POULTRY.

TABLE III. Showing by County Municipalities and groups of Counties the numbers of Sheep and of Poultry in Ontario in the years 1889 and 1890.

Counties.	Sheep.				Poultry.				
	Over 1 year.	Under 1 year.	Totals. 1890.	Totals. 1889.	Turkeys	Geese.	Other fowls.	Totals. 1890.	Totals. 1889.
Essex	16,394	11,517	27,911	22,082	9,276	15.128	134,291	158,695	179,019
Kent	20,711	15,517	36,228	27,711	11,287	11,296	171,651	194,234	191,205
Elgin	22,437	17,868	40,305	32,025	13,365	6,543	156,936	176,844	169,473
Norfolk	13,325	9,820	23,145	22,182	7,717	5,013	124,009	136,739	134,151
Haldimand	15,085	10,317	25,402	22,137	8,458	5,955	109,395	123,808	112,801
Welland	11,642	8,326	19,968	19,901	6,846	6,006	90,035	102,887	92,903
Totals	99,594	73,365	172,959	146,038	56,949	49,941	786,317	893,207	879,552
Lambton	24,863	19,549	44,412	34,042	12,728	10,391	171,801	194,920	162,255
Huron	39,052	32,377	71,429	65,570	15,855	24,088	313,165	353,108	334,126
Bruce	43,832	28,188	72,020	73,044	8,797	16,347	205,466	230,610	230,888
Totals	107,747	80,114	187,861	172,656	37,380	50,826	690,432	778,638	727,269
Grey	61,196	41,541	102,737	104,116	14,814	24,037	266,122	304,973	293,582
Simcoe	37,355	23,046	60,401	63,831	19,184	21,551	238,732	279,467	263,704
Totals	98,551	64,587	163,138	167,947	33,998	45,588	504,854	584,440	557,286
Middlesex	32,812	23,623	56,435	48,151	32,493	19,838	307,360	359,691	355,736
Oxford	11,303	8,295	19,598	24,717	8,012	5,470	188,874	202,356	198,031
Brant	9,856	7,925	17,781	16,710	7,187	3,660	82,923	93,770	89,124
Perth	25,817	18,290	44,107	45,630	9,574	16,588	221,007	247,169	228,859
Wellington	37,626	25,594	63,220	67,516	15,347	21,847	224,230	261,424	244,306
Waterloo	18,214	11,949	30,163	29,041	3,622	4,548	130,791	138,961	127,087
Dufferin	14,450	9,649	24,099	26,075	10,345	11,263	99,409	121,017	98,928
Totals	150,078	105,325	255,403	257,840	86,580	83,214	1,254,594	1,424,388	1,342,071
Lincoln	7,172	6,003	13,175	15,080	5,800	4,946	77,172	87,912	73,167
Wentworth	12,044	8,472	20,516	20,261	7,799	6,224	111,895	125,918	101,967
Halton	8,556	6,475	15,031	16,495	6,444	6,680	81,071	94,195	78,216
Peel	9,011	6,053	15,064	20,697	18,459	16,101	121,830	156,390	118,213
York	19,933	11,736	31,669	34,225	19,263	16,777	204,649	240,689	218,829
Ontario	20,342	14,467	34,809	39,320	13,619	11,316	176,554	201,489	177,111
Durham	14,571	9,691	24,262	28,419	13,408	12,679	139,872	165,959	138,657
Northumberl'd	14,304	9,902	24,206	28,163	10,901	10,498	152,977	174,376	145,435
Prince Edw'd.	6,037	4,311	10,348	11,815	2,084	3,007	98,112	103,203	79,135
Totals	111,970	77,110	189,080	214,475	97,777	88,222	1,164,132	1,350,131	1,130,730
Lennox & Ad.	9,396	7,146	16,542	14,360	5,488	5,801	92,646	103,935	81,882
Frontenac	13,892	9,236	23,128	19,880	8,290	5,750	80,939	94,979	74,069
Leeds & Gren.	24,201	18,370	42,571	42,701	31,249	15,419	190,046	236,714	213,159
Dundas	5,893	4,719	10,612	11,799	6,286	5,196	94,851	106,333	111,628
Stormont	6,771	2,975	9,746	12,203	4,118	5,121	77,225	86,464	88,469
Glengarry	10,000	5,745	15,745	17,254	2,172	5,252	92,556	99,980	103,222
Prescott	8,537	5,241	13,778	17,052	7,604	2,986	64,206	74,796	63,063
Russell	6,023	3,986	10,009	7,761	4,609	3,744	39,224	47,577	41,661
Carleton	19,668	11,375	31,043	37,632	28,233	15,862	143,486	187,581	163,239
Renfrew	33,184	18,364	51,548	55,036	12,730	8,651	95,951	117,332	114,794
Lanark	27,635	14,854	42,489	40,227	14,427	14,132	110,513	139,072	115,275
Totals	165,200	102,011	267,211	275,905	125,206	87,914	1,081,643	1,294,763	1,170,461
Victoria	16,558	11,173	27,731	27,947	9,773	9,286	113,081	132,140	131,009
Peterborough	12,083	8,185	20,268	22,360	8,263	8,996	110,592	127,851	133,204
Haliburton	2,993	1,984	4,977	4,579	830	982	14,071	15,883	11,973
Hastings	14,440	9,312	23,752	34,198	4,760	8,236	148,767	161,763	154,238
Totals	46,074	30,654	76,728	89,084	23,626	27,500	386,511	437,637	430,424
Muskoka	5,438	4,213	9,651	9,724	1,757	2,048	28,341	32,146	30,208
Parry Sound	3,894	2,556	6,450	3,436	938	1,023	21,004	22,965	13,845
Nipissing	449	246	695	.....	497	495	6,179	7,171	.....
Algoma	6,268	4,251	10,519	7,075	2,034	1,951	25,393	29,378	22,452
Totals	16,049	11,266	27,315	20,235	5,226	5,517	80,917	91,660	66,505
The Province.	795,263	544,432	1,339,695	1,344,180	466,742	438,722	5,949,400	6,854.864	6,304,298

WOOL.

TABLE IV. Showing by County Municipalities and groups of Counties the clip of Wool in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90; also the average number of pounds per fleece.

Counties.	1890.			1889.			Yearly average for the nine years 1882-90.		
	No. of fleeces.	Pounds.	lb. per fleece	No. of fleeces.	Pounds.	lb. per fleece	No. of fleeces.	Pounds.	lb. per fleece
Essex	15,401	83,898	5.45	12,874	76,729	5.96	14,486	81,111	5.60
Kent	20,447	113,515	5.55	16,682	99,091	5.94	20,631	117,099	5.68
Elgin	23,021	133,457	5.80	18,052	108,733	6.02	22,691	129,371	5.70
Norfolk	13,245	72,753	5.49	12,511	66,684	5.33	16,677	87,983	5.28
Haldimand	15,282	89,246	5.84	12,507	74,792	5.98	17,987	106,044	5.90
Welland	11,845	60,503	5.11	11,881	59,167	4.98	14,212	71,882	5.06
Totals	99,241	553,372	5.58	84,517	485,196	5.74	106,684	593,490	5.56
Lambton	24,733	145,390	5.88	19,676	118,056	6.00	25,283	147,050	5.82
Huron	39,384	233,098	5.92	39,342	226,217	5.75	48,191	273,590	5.68
Bruce	44,831	271,869	6.06	45,799	271,130	5.92	47,977	273,763	5.71
Totals	108,948	650,357	5.97	104,817	615,403	5.87	121,451	694,403	5.72
Grey	62,692	357,379	5.70	63,407	360,152	5.68	69,333	382,305	5.51
Simcoe	37,126	209,817	5.65	40,852	227,954	5.58	45,029	247,709	5.50
Totals	99,818	567,196	5.68	104,259	588,106	5.64	114,362	630,014	5.51
Middlesex	33,017	200,235	6.06	28,361	171,868	6.06	37,637	223,180	5.93
Oxford	11,435	64,603	5.65	14,212	81,577	5.74	19,761	112,608	5.70
Brant	10,074	58,103	5.77	9,592	56,593	5.90	14,083	80,453	5.71
Perth	26,128	157,185	6.02	26,420	149,273	5.65	32,295	182,147	5.64
Wellington	38,235	225,946	5.91	41,725	235,746	5.65	47,605	269,883	5.67
Waterloo	18,380	102,289	5.57	18,122	96,047	5.30	22,372	120,552	5.39
Dufferin	14,646	84,971	5.80	16,505	91,438	5.54	18,016	100,740	5.59
Totals	151,915	893,332	5.89	154,937	882,542	5.70	191,769	1,089,563	5.68
Lincoln	7,703	40,151	5.21	8,626	42,095	4.88	10,352	52,937	5.11
Wentworth	12,094	69,195	5.72	11,468	66,400	5.79	15,026	84,859	5.65
Halton	8,705	55,811	6.41	9,716	57,033	5.87	11,762	72,542	6.17
Peel	8,850	59,383	6.71	13,287	84,505	6.36	15,352	99,929	6.51
York	20,366	119,912	5.89	20,638	122,590	5.94	27,578	164,290	5.96
Ontario	20,942	126,623	6.05	23,867	144,395	6.05	27,075	165,122	6.10
Durham	15,518	91,072	5.87	17,705	102,689	5.80	20,957	121,116	5.78
Northumberland	14,371	86,203	6.00	16,785	98,696	5.88	20,603	117,810	5.72
Prince Edward	6,101	33,194	5.44	7,325	37,431	5.11	9,521	50,036	5.26
Totals	114,650	681,544	5.94	129,417	755,834	5.84	158,226	928,641	5.87
Lennox and Addington	9,594	55,228	5.76	9,277	51,395	5.54	14,925	78,522	5.26
Frontenac	14,377	78,717	5.48	12,067	65,524	5.43	18,593	93,464	5.03
Leeds and Grenville	24,596	127,943	5.20	27,030	129,744	4.80	37,063	179,936	4.85
Dundas	5,936	32,027	5.40	7,752	39,303	5.07	10,920	54,418	4 98
Stormont	6,703	36,347	5.42	8,176	44,232	5.41	9,908	51,077	5.16
Glengarry	10,100	52,089	5.16	11,974	56,517	4.72	15,499	72,428	4.67
Prescott	8,622	45,055	5.23	10,231	52,792	5.16	10,979	53,542	4.88
Russell	6,343	35,297	5.56	5,697	27,004	4.74	7,898	37,997	4.81
Carleton	19,930	104,743	5.26	24,611	129,208	5.25	28,849	145,604	5.05
Renfrew	33,748	165,218	4.90	36,214	172,741	4.77	37,081	168,063	4.53
Lanark	28,505	141,909	4.98	25,745	125,893	4.89	33,280	159,575	4.79
Totals	168,454	874,573	5.19	178,774	894,353	5.00	224,995	1,094,626	4.87
Victoria	17,378	100,247	5.77	17,942	97,784	5.45	21,677	120,171	5.54
Peterborough	12,377	64,990	5.25	13,930	73,968	5.31	16,877	88,710	5.26
Haliburton	3,065	15,239	4.97	3,118	15 871	5.09	3,368	16,036	4.76
Hastings	15,068	81,450	5.41	21,271	103,802	4.88	25,626	125,376	4.89
Totals	47,888	261,926	5.47	56,261	291,425	5.18	67,548	350,293	5.19
Muskoka	5,549	29,076	5.24	6,184	34,198	5.53	5,829	31,252	5.36
Parry Sound	4,082	22,498	5.51	2,519	15,265	6.06	2,273	13,030	5.73
Nipissing	466	2,177	4.67				52	242	4.67
Algoma	6,475	38,649	5.97	4,245	26,574	6.26	3,446	20,460	5 94
Totals	16,572	92,400	5.58	12,948	76,037	5.87	11,600	64,984	5.60
The Province	807,486	4,574,700	5.67	825,930	4,588,896	5.56	996,635	5,446,014	5.46

FACTORY CHEESE.

TABLE V. Showing by County Municipalities and groups of Counties the quantity and value of cheese made at 664 factories in Ontario in 1890, the average dates of opening and closing, and the total number of factories reported in operation.

Counties.	Factories in operation.	Factories making returns.	Quantity of— Milk used.	Quantity of— Cheese made.	Gross value of cheese.	Average No. of patrons.	Milk required to make 1 lb. cheese.	Value of cheese per 100 lb.	Average date of opening.	Average date of closing.
	No.	No.	lb.	lb.	$		lb.	$ c.		
Essex	1	1	549,271	50,025	4,518	90	10.98	9 03	May 12	Sep. 6
Kent	11	6	4,096,295	381,992	34,304	363	10.72	8 98	" 16	Oct. 24
Elgin	27	24	30,343,020	2,844,387	258,704	1,738	10.67	9 10	Apr. 29	Nov. 10
Norfolk	22	19	18,494,943	1,724,875	154,736	1,402	10.72	8 97	May 2	" 7
Haldimand	11	9	8,018,550	762,883	67,624	646	10.51	8 86	" 12	Oct. 30
Welland	3	1	1,425,157	132,774	11,884	92	10.73	8 95	" 12	Nov 24
Total	75	60	62,927,236	5,896,936	531,770	4,531	10.67	9 02	" 4	" 6
Lambton	16	10	8,118,187	755,276	68,182	741	10.75	9 03	" 13	" 1
Huron	16	15	17,851,470	1,654,675	151,686	1,308	10.79	9 17	" 14	Oct. 31
Bruce	22	18	21,599,392	2,013,833	182,297	1,572	10.73	9 05	" 17	" 25
Total	54	43	47,569,049	4,423,834	402,165	3,621	10.75	9 09	" 15	" 29
Grey	11	10	8,830,548	842,803	75,002	698	10.48	8 90	" 20	" 18
Simcoe	6	5	2,237,516	212,965	19,135	206	10.51	8 99	" 23	" 13
Total	17	15	11,068,064	1,055,768	94,137	904	10.48	8 91	" 21	" 16
Middlesex	40	36	50,825,388	4,717,755	433,118	2,642	10.77	9 18	" 2	Nov. 6
Oxford	43	39	84,297,098	7,914,767	724,297	2,874	10.65	9 15	Apr. 19	" 18
Brant	8	6	6,330,352	599,022	53,145	376	10.57	8 87	" 28	" 5
Perth	26	22	34,105,543	3,162,573	294,621	1,673	10.78	9 32	May 6	" 6
Wellington	11	10	13,382,441	1,267,946	115,802	879	10.55	9 13	" 19	Oct. 30
Waterloo	5	4	4,276,516	395,201	36,765	296	10.82	9 30	" 13	Nov. 1
Dufferin	3	3	1,329,135	126,424	11,344	134	10.51	8 97	" 20	Oct. 15
Total	136	120	194,546,473	18,183,688	1,669,092	8,874	10.70	9 18	" 1	Nov. 8
Lincoln	4	3	2,108,187	195,640	17,271	225	10.78	8 83	May 14	Oct. 25
Wentworth	3	2	1,663,959	161,541	14,800	82	10.30	9 16	" 8	Nov. 3
Peel	1	1	425,348	39,400	3,500	30	10.80	8 88	" 15	Oct. 10
York	3	3	495,336	46,777	4,519	55	10.59	9 66	June 3	Sep. 21
Ontario	1	1	321,180	28,663	2,700	40	11.21	9 42	May 26	Oct. 13
Durham	6	6	3,443,940	321,896	28,761	277	10.70	8 93	" 9	" 31
Northumberland	36	32	30,181,191	2,870,487	259,142	1,505	10.51	9 03	Apr. 29	Nov. 3
Prince Edward	17	13	11,346,069	1,080,091	94,934	922	10.50	8 79	May 3	Oct. 24
Total	71	61	49,985,210	4,744,495	425,627	3,136	10.54	8 97	" 4	" 28
Lennox & Addington.	21	19	26,129,718	2,531,724	232,057	1,646	10.32	9 17	" 1	Nov. 2
Frontenac	39	26	17,057,760	1,647,701	146,304	763	10.35	8 88	" 5	Oct. 27
Leeds and Grenville.	107	87	86,933,075	8,269,785	741,683	3,599	10.51	8 97	Apr. 26	Nov. 2
Dundas	36	26	19,636,805	1,879,508	168,590	928	10.45	8 97	May 1	Oct. 29
Stormont	28	23	17,397,482	1,683,586	147,308	983	10.33	8 75	" 2	" 26
Glengarry	38	24	11,216,784	1,078,297	96,753	650	10.40	8 97	" 7	" 26
Prescott	32	21	10,471,157	1,025,904	90,580	646	10.21	8 83	" 6	" 25
Russell	9	7	3,150,638	306,735	27,011	204	10.27	8 81	" 16	" 15
Carleton	20	12	6,903,035	653,877	59,337	414	10.56	9 07	" 16	" 18
Renfrew	4	4	1,589,111	156,178	13,476	142	10.17	8 63	" 23	" 12
Lanark	25	23	22,168,166	2,131,628	190,137	1,299	10.40	8 92	" 7	" 23
Total	359	272	222,653,731	21,364,923	1,913,236	11,274	10.42	8 96	" 3	" 28
Victoria	10	10	6,027,252	572,093	51,663	470	10.54	9 03	" 16	" 31
Peterborough	22	19	21,692,524	2,032,660	185,869	1,062	10.67	9 14	" 3	" 30
Haliburton	6	4	909,261	89,784	7,948	78	10.13	8 85	" 15	" 31
Hastings	67	60	62,378,006	6,137,862	561,983	2,691	10.16	9 16	Apr. 28	Nov. 2
Total	105	93	91,007,043	8,832,399	807,463	4,301	10.30	9 14	May 1	" 1
The Province	817	664	679,756,806	64,502,043	5,843,490	36,441	10.54	9 06	" 4	Oct. 31
Estimated at 153 factories not reported.	....	.....	156,630,710	14,862,670	1,346,467	8,397	.....	.....	.....	.....
Total for 817 factories.	....	.....	836,387,516	79,364,713	7,189,957	44,838	.....	.....	.....	.....

PART III.

VALUES, RENTS AND FARM WAGES.

VALUES OF FARM PROPERTY.

The table below gives the value of farm property by county groups for the years 1889 and 1890, under the heads of land, buildings, implements and live stock, the totals for the province in each of these years, and the average for the nine years 1882–90 :

Districts.	Farm land.	Buildings.	Implements.	Live stock.	Total farm property.
	$	$	$	$	$
Lake Erie 1890	87,352,875	25,399,366	6,784,793	13,822,445	133,359,479
1889 ...	87,865,147	25,039,332	6,876,644	13,457,339	133,238,462
Lake Huron 1890	69,912,071	19,495,144	5,407,097	12,611,995	107,426,307
1889	70,696,974	18,991,619	5,503,309	12,638,402	107,830,304
Georgian Bay 1890	48,931,045	14,392,172	4,285,087	8,784,252	76,392,556
1889	48,930,443	14,759,680	4,529,700	9,221,997	77,441,820
West Midland..... 1890	131,682,712	42,095,403	10,164,923	22,666,507	206,609,545
1889	136,387,257	42,161,762	10,478,851	22,208,386	211,236,256
Lake Ontario..... 1890	135,869,460	44,454,383	10,508,724	20,474,216	211,306,783
1889	138,904,264	43,340,883	10,864,907	20,798,891	213,908,945
St. Lawrence and Ottawa... 1890	103,794,410	34,491,377	9,418,689	18,029,706	165,734,182
1889	104,077,562	34,727,499	9,496,358	19,099,339	167,400,758
East Midland..... 1890	39,462,646	11,493,877	3,384,004	6,432,464	60,772,991
1889	40,728,431	12,237,461	3,494,646	7,309,068	63,769,606
Northern Districts..... 1890	5,880,781	1,617,104	562,266	1,265,041	9,325,192
1889	4,739,355	1,206,001	441,291	997,866	7,384,513
The Province :					
1890.....	622,886,000	193,438,826	50,515,583	104,086,626	970,927,035
1889	632,329,433	192,464,237	51,685,706	105,731,288	982,210,664
1882-90.....	635,514,008	177,145,010	47,632,015	100,965,860	961,256,893

The total value of farm property in Ontario is $970,927,035, which is less by $11,283,629 than in 1889. This loss in value is divided between three of the four items of the table as follows : Farm land, $9,443,433 ; implements, $1,170,123, and live stock, $1,644,662. A net increase of $974,589 is observed in the total value of buildings, although four of the groups fail to show an improvement. Outside of the newly settled Northern Districts, the Georgian Bay is the only group that does not show an increase in the value of farm land over last year's figures, while in the matter of implements the Northern Districts alone report an advanced value. Live stock have declined in value in every group excepting the Lake Erie and West Midland and the Northern Districts. The Lake Erie group is the only one of the older districts which has an increase in the total value of farm property ; but of course the Northern Districts show a great gain. The value of the farm land of the province is about two per cent. below the average derived for the nine years, but owing to additions in the values of buildings, implements and live stock, the total farm property is about one per cent. higher than the average annual value

Value per Acre Occupied. The value per acre occupied, by classes of farm property, is shown in the following table by county groups and for the province for 1889 and 1890:

Districts.	Farm land.		Buildings.		Implements.		Live stock.		Total farm property.	
	1890.	1889.	1890	1889.	1890.	1889.	1890.	1889.	1890.	1889.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	37 40	37 50	10 87	10 69	2 90	2 93	5 92	5 74	57 09	56 86
Lake Huron	30 73	31 14	8 57	8 37	2 38	2 42	5 54	5 57	47 22	47 50
Georgian Bay	24 31	24 17	7 15	7 29	2 13	2 24	4 37	4 56	37 96	38 26
West Midland	40 52	41 96	12 95	12 97	3 13	3 22	6 97	6 83	63 57	64 98
Lake Ontario	44 63	45 55	14 60	14 21	3 45	3 56	6 72	6 82	69 40	70 14
St. Lawrence and Ottawa	19 68	19 72	6 54	6 58	1 79	1 80	3 42	3 62	31 43	31 72
East Midland	14 89	15 33	4 34	4 61	1 28	1 31	2 43	2 75	22 94	24 00
Northern Districts	3 73	3 99	1 02	1 01	0 36	0 37	0 80	0 84	5 91	6 21
The Province	27 79	28 66	8 63	8 73	2 25	2 34	4 64	4 79	43 31	44 52

The statement for the province is very discouraging. Land has decreased in value 87 cents per acre in the year, buildings 10 cents, implements 9 cents and live stock 15, making a decline of $1.21 per acre in the total value of farm property. The greatest relative decline in the value of all farm property occurs in the East Midland group, while an increase upon their figures of 1889 is observed in the Lake Erie counties. The Lake Ontario group shows the highest figures in the value per acre occupied of farm land, buildings and implements, but in the item of live stock it is surpassed by the West Midland district, which has made a considerable increase in the value of this class of farm property.

Calculated upon the total area occupied the values per acre of buildings, implements and live stock show a very wide range in the various groups into which the province has been divided. Their distribution is thus indicated, but if we base our averages upon the area cleared, as is done in the following table, we will find no such marked divergence, but that these improvements follow closely the advance in settlement or territory cleared:

Farm property.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern Districts.	The Province.		
									1890.	1889.	1882-90.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Buildings	18 17	14 67	13 81	18 34	19 32	14 99	13 69	10 38	16 59	16 76	16 13
Implements	4 85	4 12	4 11	4 43	4 13	4 09	4 03	3 61	4 33	4 50	4 34
Live stock	9 89	9 49	8 43	9 89	8 30	7 83	7 66	8 12	8 93	9 21	9 19
Total	32 91	28 28	26 35	32 66	32 35	26 91	25 38	22 11	29 85	30 47	29 66

It will be seen that with the exception of farm buildings the newest portion of the province, the Northern Districts, is well equipped as compared with the older counties. In the aggregate the Lake Erie, West Midland and Lake Ontario groups are bunched as leaders.

Market Prices. The following table is made up from market reports of newspapers published at fourteen market centres, the figures being taken during the period when each of the various articles of farm produce comprising the table are mainly marketed. The average price is also given for a series of years :

Markets.	Fall wheat, per bushel.	Spring wheat, per bushel.	Barley, per bushel.	Oats, per bushel.	Rye, per bushel.	Pease, per bushel.	Corn (in ear), per bushel.	Buckwheat, per bushel.	Beans, per bushel.	Potatoes, per bushel.	Carrots, per bushel.	Turnips, per bushel.	Hay, per ton.	Wool, per lb.
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	$ c.	cts.
Belleville	84.8	91.3	51.0	37.7	52.4	57 3	34.0	....	.....	44.7	....	....	6 38	23.0
Brantford	90.6	89.7	50.3	38.1	48.2	58.2	28.1	45.0	112.5	49.1	40.0	15.0	6 65	20.0
Brockville	97.7	97.7	49 2	42.3	51.1	65.3	....	42.5	183.7	41.5	45.0	29.8	7 40	19.0
Chatham	91.3	89.9	41.6	38.7	....	52.9	24.2	....	106.9	49.9	....	....	6 94	19.6
Cobourg	89.4	86.4	49.2	38.2	54.7	57.6	....	35.9	.....	32.9	36.0	19.0	....	....
Guelph	93.3	88.2	47.5	38.3	45.1	58.0	....	....	.....	36.3	....	12.9	6 90	21.3
Kingston	95.2	93.7	53.5	38.2	53.7	61.2	34.9	34.3	.....	47.8	33.3	33.3	6 61	18.7
Lindsay	94.7	87.3	44.9	36.7	45.8	60.6	....	32.5	.....	29.0	....	....	6 62	19.0
London	91.9	91.5	46.3	39.6	55.6	58.5	30.6	46.6	121.8	42.6	29.4	28.3	7 29	19.7
Ottawa	101.0	101.1	48.6	42.7	42.5	61.3	33.5	....	.....	35.6	24.7	18.0	9 40	18.5
Peterborough	94.5	91.7	46.0	39.1	46.4	60.2	....	....	.....	40.5	....	....	7 33	19.1
St Thomas	91.7	....	47.9	41.0	....	57.1	31.7	....	.....	47.8	...	....	6 62	19.0
Stratford	92.7	92.7	43.0	37.7	....	59.8	....	....	.....	35.4	....	....	5 49	....
Toronto	96.5	90.1	54.4	44.3	53.1	62.8	....	....	.....	48.4	31.2	24.9	8 99	23.1
The Province :														
1890	94.2	91.3	50.2	41.1	52.7	60.3	30.5	43.0	128.5	44.3	31.5	25.6	7 95	20.5
1889	88.4	88.1	44.0	30.5	50.9	55.7	25.9	39.5	126.7	45.5	27.3	22.8	9 98	20.7
1888	102.4	99.3	60.1	40.5	60.2	65.4	29.3	49.3	113.7	31.7	26.8	20.8	16 71	20.4
1887	78.4	78.0	56.7	34 6	49.5	55 9	28.7	45.0	97.9	62.8	28.0	29.5	11 62	22.1
1886	73.6	72.5	51.3	32.0	52.2	52.6	27.6	33.7	83.7	44.9	29.5	24.6	9 69	19.1
1885	81.5	80.6	55.2	31.5	55.2	58.0	27.9	39.2	80.0	41.1	32.5	23.6	9 85	17.4
1884	80.5	81.4	53.6	33.1	59.7	64.4	....	....	.....	....	....	....	.....	....
1883	105.0	107.0	57.0	38.0	62.0	71.0	....	....	.....	....	....	....	.....	....
1882	101.0	106.0	65.0	43.0	64.0	74.0	....	....	.....	...	....	....	.....	....
1885-90.	85.4	84.1	52.8	35.0	53.6	58.0	28.5	41.2	107.0	43.1	29.4	24.3	10 42	19.9
1882-90.	90.7	89.1	55.0	35.9	59.1	61.3	....	....	.....	....	....	....	.....	....

Of the fourteen items comprising the table, potatoes, hay and wool are the only ones which fail to equal their respective averages for the preceding year. Fall and spring wheat exceed their averages for 1882-90, but barley is 4.8 cents below its figures for the nine years, although 6.2 cents higher than in 1889, when the crop was much injured for the market by discoloration. Oats are 5.2 cents above the average for the nine years, but rye has a drop of 6.4 cents compared with the same term. Pease are one cent lower than the average for 1882-90. Of the remaining crops hay is the only one which shows a decrease compared with the averages in the six years (1885-90) for which a record has been kept. This falling off in the price of hay, however, is a large one, amounting to $2.47 per ton. The increase in yield nearly offset this reduction per acre.

Value of Crops. The value of each crop is given in the following table, based upon market prices, for each of the five years 1886-90, together with the averages for the six years 1885-90 and the nine years 1882-90. For the bracketed items no record was

kept prior to 1885, but their averages for the six years are added to those of the other items for 1882-90 so as to give the nearest approximate average for the long term :

Crops.	1890.	1889.	1888.	1887.	1886.	Average 1885-90.	Average 1882-90.
	$	$	$	$	$	$	$
Fall wheat	13,439,875	11,493,648	14,162,726	11,321,439	13,300,361	13,537,141	15,745,344
Spring wheat	7,015,405	5,019,680	6,408,384	4,393,831	6,900,951	6,182,823	7,738,005
Barley	7,831,285	10,290,011	14,043,308	9,715,448	10,009,799	10,169,398	10,838,360
Oats	21,687,734	19,625,622	26,514,099	17,247,443	18,772,995	20,207,544	20,310,715
Rye	823,883	728,725	779,772	442,969	577,573	675,799	1,031,138
Pease	9,279,756	7,524,645	9,332,490	6,804,892	8,439,004	8,250,730	8,227,182
Corn	4,273,410	2,395,283	5,108,976	2,412,164	2,982,265	3,361,491	
Buckwheat	883,100	502,668	602,585	461,409	565,725	602,585	
Beans	978,323	471,188	607,756	270,180	403,494	521,365	
Hay	34,232,024	37,208,564	33,570,674	35,947,748	29,016,182	33,668,153	56,642,491
Potatoes	7,779,575	6,531,766	7,060,733	6,705,784	7,189,548	7,322,644	
Carrots	1,326,321	936,925	1,044,820	589,592	1,029,710	1,008,770	
Turnips	12,042,384	8,440,847	9,909,169	9,266,970	11,577,019	10,157,483	
Totals	121,593,075	111,169,572	129,145,492	105,579,869	110,764,626	115,665,926	120,533,235

The total value of the thirteen crops comprising the table is $121,593,075, which is $10,423,503 more than in the previous year and $1,059,840 more than the average of the eight years 1882-90. A great falling off is observed in the values of barley and hay compared with the preceding year, that of the former being lower in 1890 than in any other year of the table. A substantial increase is observed in the value of the remainder of the grains compared with the figures of 1889, although fall and spring wheats, rye and corn do not equal their averages for the long term. The root crops each exceed their values in any of the previous years.

Crop Values by County Groups. The aggregate value of field crops for each of the five years 1886-90, together with the averages for two series of years, is presented in the following table by county groups and for the province :

Districts.	1890.	1889.	1888.	1887.	1886.	Average 1885-90.	Average 1882-90.
	$	$	$	$	$	$	$
Lake Erie	14,791,696	12,926,470	17,889,286	12,080,651	13,485,030	14,361,449	14,553,271
Lake Huron	13,634,099	11,009,721	14,303,010	11,936,938	11,438,427	12,553,355	12,988,489
Georgian Bay	11,465,081	10,391,701	10,969,814	9,447,927	9,447,776	10,258,013	10,855,881
West Midland	27,655,714	22,006,961	29,217,226	22,805,391	23,691,683	25,010,326	25,954,287
Lake Ontario	25,675,051	25,342,044	27,908,395	22,386,070	24,623,942	25,230,000	26,491,065
St. L. and Ottawa	18,660,552	19,928,380	20,171,732	18,975,474	19,046,820	19,389,577	20,291,539
East Midland	7,847,766	8,089,324	7,213,525	6,459,491	7,870,811	7,421,307	7,917,920
Northern Districts	1,863,113	1,474,971	1,472,504	1,487,927	1,160,137	1,441,899	1,480,783
The Province	121,593,075	111,169,572	129,145,492	105,579,869	110,764,626	115,665,926	120,533,235

A decrease is noted in the St. Lawrence and Ottawa and East Midland counties compared with their respective values in 1889, but in every other group an increase is observed, running as high as $5,648,753 in the case of the West Midland District. Four of the groups, viz., the Lake Erie, Lake Ontario, St. Lawrence and Ottawa and East Midland,

fall below their averages for the nine years. The West Midland group regains its position as leader in the value of all field crops, the Lake Ontario counties once more falling into second place, although they are first in the average for nine years.

VALUE OF PRODUCE PER ACRE UNDER CROP. The following table gives the value per acre grown by each of the principal field crops by county groups and for the province for 1889 and 1890, together with averages for a series of six and nine years. The average value per acre of all field crops is also shown for the same periods :

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern District.	The Province.			
									1890	1889	1885-90	1882-90
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Fall wheat	17 68	19 64	17 04	20 75	17 66	15 14	16 37	16 88	18 66	13 98	16 15	17 33
Spring wheat.....	12 04	14 17	12 10	15 11	10 85	10 23	11 14	13 35	11 66	12 59	11 49	13 59
Barley	10 31	12 21	12 12	13 44	10 30	9 90	9 98	10 66	11 17	11 76	13 34	14 18
Oats	9 80	11 95	12 31	12 75	11 57	10 52	11 46	11 02	11 52	10 20	11 54	12 36
Rye	7 60	9 93	8 01	8 75	7 20	8 47	8 24	9 73	7 99	8 09	8 25	9 58
Pease	9 04	12 78	13 09	11 59	11 77	12 10	13 16	13 32	11 88	10 63	11 61	12 47
Corn	20 44	17 81	16 60	19 00	17 13	19 00	15 70	11 53	19 09	12 80	17 97	
Buckwheat	9 06	6 80	7 94	8 62	9 55	10 60	10 02	10 27	9 80	8 91	9 02	
Beans	24 83	19 88	25 23	23 87	22 72	26 41	27 99	26 86	24 80	21 58	20 86	
Hay	14 58	14 22	14 23	16 45	14 49	11 52	12 62	13 71	13 90	15 59	14 44	19 69
Potatoes	35 00	46 08	64 59	51 83	42 78	51 75	50 27	64 67	49 21	44 80	48 93	
Carrots	95 93	111 55	114 80	117 94	118 47	99 76	110 24	68 90	110 74	83 20	97 36	
Turnips	85 28	112 06	108 93	105 56	118 79	93 98	91 43	88 58	108 44	75 97	94 94	
All crops :												
1890.....	14 86	16 07	16 49	18 07	15 44	12 68	13 84	16 21	15 42	.....	.....	.....
1889.....	13 63	13 59	14 46	14 93	15 24	13 75	13 93	15 71	.....	14 37	.....	.....
1885-90....	15 20	15 80	15 20	17 06	15 56	13 76	13 33	15 90	.....	.....	15 30	.....
1882-90....	15 62	16 47	16 13	17 82	16 40	14 35	14 11	16 53	.....	.....	.....	16 01

The average value of produce per acre under crop is $15.42, which is $1.05 more than in 1889, but 59 cents less than the average for the nine years 1882-90. The best return per acre for all crops is found in the West Midland group, being $18.07, while the average value falls to $13.84 in the East Midland District. The root crops, which are the most expensive to handle, of course show the highest value per acre, and beans come next. While the average value per acre of fall wheat is $18.66, spring wheat, barley, oats and pease bunch close together at a much lower figure, the highest being $11.88 and the lowest $11.17 per acre. All the grain crops except fall wheat drop below their respective averages for the long term, but of the crops bracketted for the six years hay is the only crop which does not equal its average value per acre. The best values for each of the various crops are observed in the following groups : Fall wheat $20.75, spring wheat $15.11, barley $13.44, oats $12.75, and hay $16.45, in the West Midland group ; rye $9.93 and turnips $112.06 in the Lake Huron group ; pease $13.32 and potatoes $64.67 in the Northern Districts ; corn $20.44 in the Lake Erie group ; buckwheat $10.60 in the St. Lawrence and Ottawa counties ; beans $27.99 in the East Midland group, and carrots $118.47 in the Lake Ontario District.

PER CENT. RATIOS OF VALUES PER ACRE. In the following table the values per acre for 1890 are compared with their respective averages for the nine years

1882-90 by means of per cent. ratios, each of the leading crops being shown by county groups and for the province :

Districts.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay.	Potatoes.	Carrots.	Turnips.	All field crops.
Lake Erie	108	96	76	77	85	81	107	110	122	95	94	114	105	95
Lake Huron	115	118	84	95	98	96	101	91	98	94	96	113	116	98
Georgian Bay	93	93	88	105	76	100	110	112	121	105	113	113	115	102
West Midland	118	116	87	94	92	89	106	113	114	103	109	116	109	101
Lake Ontario	99	76	72	90	83	97	105	104	107	103	94	112	120	94
St. Lawrence & Ottawa	91	72	76	92	79	101	113	112	111	82	99	120	116	88
East Midland	93	86	76	103	89	113	107	111	136	104	96	114	110	98
Northern Districts	95	80	84	99	85	94	98	103	116	105	97	95	117	98
The Province	108	86	79	93	83	95	106	109	119	96	101	114	114	96

The highest percentage in the province in 1890 is given to beans and fall wheat, corn, buckwheat, potatoes, carrots and turnips also exceed the 100. Barley has the lowest per cent. ratio, only 79 being reached. Barley and rye failed to reach the annual average in any of the county groups, while turnips went over 100 in every district. In the West Midland group nine out of the thirteen items go over the standard, and in the Georgian Bay district eight go over and one equals the 100. Only four items show three figures in the Northern Districts. For all crops the Georgian Bay and West Midland groups exceed 100, and three others mark as high as 98 per cent. ; the least per cent. ratio is 88, in the St. Lawrence and Ottawa group.

Rentals of Leased Farms. The appended table presents by districts the average area, value and rental of such leased farms as were reported on farmers' schedules returned to this Bureau in 1890. The rental per acre is given on the bases of land occupied and land cleared. The averages of the province are given for 1890 and for the five years 1886-90 :

Districts.	Per cent. leased.	Average area of leased farms.		Average yearly rental.	Rent per acre based on—					
					Acres occupied.			Acres cleared.		
		Acres occupied.	Acres cleared.		1890.	1889.	'86-90.	1890.	1889.	'86-90.
				$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	13.3	105.5	77.2	223	2 11	2 09	2 10	2 89	2 88	2 92
Lake Huron	11.1	112.9	86.9	212	1 88	1 79	1 91	2 44	2 51	2 63
Georgian Bay	12.5	112.8	82.9	179	1 59	1 60	1 56	2 16	2 26	2 23
West Midland	14.2	119.6	92.0	267	2 23	2 25	2 28	2 90	2 94	3 00
Lake Ontario	19.1	121.7	98.3	315	2 57	2 72	2 70	3 18	3 29	3 30
St. Lawrence and Ottawa	10.4	128.6	83.6	174	1 36	1 32	1 35	2 09	2 16	2 19
East Midland	10.4	138.9	85.5	209	1 51	1 61	1 57	2 45	2 57	2 55
Northern Districts	5.2	205.9	49.4	84	0 41	0 51	0 44	1 70	1 70	1 75
The Province :										
1890	12.9	120.3	87.4	238	1 98	.....	.....	2 72	.....	.....
1889	.....	.....	.....	....	.....	1 96	....	.....	2 80	.....
1886-90	14.1	120.3	86.5	246	.....	.....	2 03	.....	.....	2 83

The percentage of farms returned as leasehold is 12.9, being a decrease of 1.2 as compared with the average for the five years. The average number of acres occupied in a leased farm is unchanged at 120.3, but there is an increase of .9 in the acreage cleared,

which is now 87.4. The average yearly rental is $238, being a decrease of $8 compared with the average for the five years. The rent per acre occupied is $1.98, being 2 cents more than in 1889 and 5 cents less than the average for the five years, but the rent per acre cleared, $2.72, is 8 cents below the figure for the previous year and 11 cents lower than the average for 1886-90. The largest cleared area in this class of farms is seen in the Lake Ontario counties, in which group the highest rental per acre is also paid, and in both these respects the West Midland counties rank second. Neither of these groups, however, command as good a rental per acre as they did in the preceding year.

FARM LABOR AND WAGES.

A scarcity of farm laborers was reported in only a few localities in the spring, but a deficiency of first-class hands was noted, more especially of good plowmen. There was also a dearth of domestic servants in the rural sections, as the girls seems to prefer city life. The August bulletin reported the supply of farm labor about equal to the demand, and but rarely in excess of it. "Year by year the demand for outside help is gradually falling off with the more general use of binders and other labor-saving machinery, so that many farmers with their sons (if they are fortunate enough to have sons who will stay on the farm) now do the whole of the work themselves, and hardly find the work of harvest heavier than that of any other season." The crowding of the immense hay crop upon the rest of the harvest caused some scarcity in a few localities and made the work somewhat heavy for the time being, but as a general rule little difficulty has been experienced. The rate of wages has ranged from $1 to $1.50 by the day, and from $15 to $25 by the month, according to the efficiency and supply of labor. The rate was slightly lower in the eastern part of the province than elsewhere.

The November bulletin had the following :—"The situation as regards farm wages is but little changed from that of last year. The supply of labor has been on the whole adequate, except at the height of harvesting. Domestic servants are still rather scarce, urban life with its better wages and its attractive surroundings enticing the more ambitious girls from the farm. While a few correspondents express the opinion that wages are likely to fall, the bulk of the reports are to the effect that no great change need be looked for, except where influenced by local causes, such as a revival of the lumbering interest, railway building and other public improvements. Many farmers speak despondently of the situation."

WAGES OF FARM LABORERS. The following table shows the average rates of wages for farm laborers by the year and by the month, with and without board, by county groups and for the province for 1889 and 1890, together with their averages for the nine years 1882-90 ; also the average amounts paid domestic servants in 1889 and 1890 :

Districts.	Farm laborers.												Domestics per month with board.	
	Per year—						Per month in working season.							
	With board.			Without board.			With board.			Without board.				
	1890	1889	'82-90	1890	1889	'82-90	1890.	1889.	'82-90	1890.	1889.	'82-90	1890	1889
	$	$	$	$	$	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$	$
Lake Erie.....	154	160	159	247	249	249	16 65	17 19	17 42	25 94	25 45	26 33	6 40	6 93
Lake Huron	155	163	163	256	250	258	16 72	17 98	17 95	27 04	26 39	27 48	6 18	6 38
Georgian Bay....	156	160	160	257	253	255	16 73	17 44	17 84	26 23	26 66	27 39	5 77	6 33
West Midland....	157	161	161	251	245	251	16 54	17 20	17 56	26 24	25 31	26 70	6 36	6 76
Lake Ontario ...	159	163	163	254	248	253	16 87	17 44	17 58	26 34	25 54	26 69	6 42	6 86
St. Law. & Ottawa	159	159	162	253	241	251	17 17	17 92	18 10	26 86	26 24	26 97	6 00	6 37
East Midland....	160	165	165	258	263	257	16 77	17 67	17 85	25 68	26 55	27 02	5 93	6 32
Nrth'rn Districts.	174	175	174	280	278	276	19 74	19 38	19 73	29 59	28 83	29 64	6 40	6 32
The Province..	157	162	162	253	249	253	16 88	17 59	17 72	26 56	26 01	27 04	6 23	6 61

The yearly rate with board for the province has fallen from the average of $162 in 1889 and 1882-90 to $157 (the average for 1888 also), but the amount without board has increased to $253, which is $4 more than in 1889, although exactly the same as the average of the province for the nine years. Monthly wages with board averaged $16.88 during the working season, a falling off of 71 cents compared with the rate in the previous year, but there has been an increase of 55 cents in the average rate of wages per month without board, although the average for 1882-90 was not equalled. The average wages of domestic servants on the farm has fallen from $6.61 in 1889 to $6.23. Save in the St. Lawrence and Ottawa counties, where the figures tied, every group exhibited a decrease in the yearly rate with board compared with their record of 1889. The Lake Erie and East Midland groups were the only districts falling below their own figures of the previous year in the yearly rate without board. The Northern Districts alone show an increase in the rate of wages per month with board, while the Georgian Bay, West Midland and Lake Ontario groups exhibit a decrease in monthly wages without board. Excepting the Northern Districts, the fall in the rate of wages of domestic servants is general.

STATISTICS OF

VALUES, RENT AND FARM WAGES.

FARM VALUES—LAND, BUILDINGS AND IMPLEMENTS.

TABLE I. Showing by County Municipalities and groups of Counties the values of Farm Land Buildings and Implements in Ontario in 1889 and 1890.

Counties.	Farm land.		Farm buildings.		Farm implements.	
	1890.	1889.	1890.	1889.	1890.	1889.
	$	$	$	$	$	$
Essex	16,585,081	16,359,666	4,226,122	4,262,194	1,234,940	1,096,392
Kent	23,777,291	23,766,542	5,503,006	5,326,115	1,555,151	1,584,155
Elgin	17,489,547	17,606,191	5,005,478	4,755,988	1,207,841	1,312,551
Norfolk	11,713,740	11,941,445	4,110,525	4,121,397	1,048,016	1,069,101
Haldimand	9,358,909	9,526,805	3,451,788	3,515,166	950,757	955,267
Welland	8,428,307	8,664,498	3,102,447	3,058,472	788,088	853,178
Totals	87,352,875	87,865,147	25,399,366	25,039,332	6,784,793	6,876,644
Lambton	20,022,595	19,865,126	4,962,205	4,633,682	1,377,776	1,310,583
Huron	29,513,722	30,148,600	8,617,158	8,351,173	2,354,921	2,397,494
Bruce	20,375,754	20,683,248	5,915,781	6,006,764	1,674,400	1,795,232
Totals	69,912,071	70,696,974	19,495,144	18,991,619	5,407,097	5,503,309
Grey	22,262,173	22,238,762	7,041,914	7,105,583	2,126,990	2,222,106
Simcoe	26,668,872	26,691,681	7,350,258	7,654,097	2,158,097	2,307,594
Totals	48,931,045	48,930,443	14,392,172	14,759,680	4,285,087	4,529,700
Middlesex	34,925,968	35,459,934	10,231,305	10,276,374	2,505,058	2,485,829
Oxford	22,356,395	22,938,421	7,334,038	7,077,071	1,577,461	1,591,264
Brant	10,253,987	10,670,935	3,837,380	3,748,820	813,005	826,939
Perth	20,184,159	22,118,289	6,513,584	6,606,954	1,711,863	1,742,971
Wellington	21,120,421	21,774,648	6,859,654	7,071,961	1,679,613	1,936,157
Waterloo	13,696,727	14,409,922	4,846,400	4,773,232	1,150,671	1,186,659
Dufferin	9,145,055	9,015,108	2,473,042	2,607,350	727,252	709,032
Totals	131,682,712	136,387,257	42,095,403	42,161,762	10,164,923	10,478,851
Lincoln	8,938,290	8,885,403	3,453,792	3,519,861	741,425	832,883
Wentworth	13,625,007	13,860,384	4,695,485	4,811,264	1,104,829	1,199,717
Halton	9,989,717	9,231,520	3,445,730	3,218,964	783,141	754,617
Peel	13,878,876	14,218,973	4,549,242	4,773,029	1,041,939	1,121,742
York	31,930,300	29,915,054	9,111,861	8,187,700	2,019,768	2,140,772
Ontario	19,404,819	20,682,965	6,223,752	5,950,238	1,533,199	1,522,060
Durham	15,043,081	16,901,141	4,854,750	4,363,883	1,095,288	1,168,638
Northumberland	14,334,306	15,993,842	5,149,288	5,410,876	1,346,999	1,336,511
Prince Edward	8,725,064	9,214,982	2,970,483	3,105,068	842,136	788,027
Totals	135,869,460	138,904,264	44,454,383	43,340,883	10,508,724	10,864,937
Lennox and Addington	9,455,784	10,270,957	2,998,745	3,531,754	777,704	796,799
Frontenac	8,486,769	9,446,098	3,018,113	2,968,677	751,002	900,764
Leeds and Grenville	18,565,738	18,396,123	7,026,849	6,508,528	1,691,578	1,657,423
Dundas	7,783,443	8,573,212	2,649,191	2,915,796	690,360	694,875
Stormont	5,820,418	6,170,322	2,133,567	2,089,032	567,921	583,996
Glengarry	7,109,229	7,805,957	2,551,557	2,543,121	760,977	696,648
Prescott	7,074,698	6,651,234	1,969,640	2,033,614	591,081	621,669
Russell	4,298,201	4,180,338	1,165,330	1,443,003	448,044	344,522
Carleton	18,178,141	16,179,566	5,030,330	4,804,864	1,304,938	1,331,767
Renfrew	7,316,604	7,123,449	2,464,751	2,588,078	907,811	934,024
Lanark	9,705,385	9,280,306	3,483,304	3,300,732	927,273	933,871
Totals	103,794,410	104,077,562	34,491,377	34,727,499	9,418,689	9,496,358
Victoria	12,077,621	12,834,370	3,269,940	3,183,917	1,026,237	1,005,748
Peterborough	10,638,657	10,895,756	3,027,443	3,469,814	797,050	891,318
Haliburton	992,536	911,515	269,547	267,053	81,341	80,803
Hastings	15,753,832	16,086,790	4,926,947	5,316,672	1,479,376	1,516,777
Totals	39,462,646	40,728,431	11,493,877	12,237,461	3,384,004	3,494,646
Muskoka	2,119,171	2,018,301	623,276	609,246	195,439	216,490
Parry Sound	1,476,517	1,059,968	340,409	224,559	133,301	90,199
Nipissing	436,670	.....	104,050	.....	27,947	.....
Algoma	1,848,423	1,661,086	549,369	372,196	205,579	134,602
Totals	5,880,781	4,739,355	1,617,104	1,206,001	562,266	441,291
The Province	622,886,000	632,329,433	193,438,826	192,464,237	50,515,583	51,685,706

FARM VALUES—LIVE STOCK AND TOTAL PROPERTY—RENTALS.

TABLE II. Showing by County Municipalities and groups of Counties the values of Farm Live Stock and Total Farm property in Ontario in 1889 and 1890; also the rent per acre of leased farms as reported in 1889 and 1890.

Counties.	Farm live stock.		Total farm property.		Rent per acre on land.			
					Occupied.		Cleared.	
	1890.	1889.	1890.	1889.	1890.	1889.	1890.	1889.
	$	$	$	$	$ c.	$ c.	$ c.	$ c.
Essex	2,522,114	2,352,893	24,568,257	24,071,145	2 14	1 85	3 36	2 97
Kent	3,492,894	3,261,733	34,328,342	33,938,545	2 48	2 55	3 57	3 47
Elgin	2,856,740	2,676,418	26,559,606	26,351,148	2 27	2 14	3 11	2 89
Norfolk	1,791,306	1,940,819	18,663,587	19,072,762	1 74	1 86	2 27	2 73
Haldimand	1,763,491	1,796,454	15,524,945	15,793,692	1 75	1 80	2 23	2 30
Welland	1,395,900	1,429,022	13,714,742	14,011,170	2 08	1 94	2 57	2 45
Totals	13,822,445	13,457,339	133,359,479	133,238,462	2 11	2 09	2 89	2 88
Lambton	3,127,010	2,903,227	29,489,586	28,712,618	1 91	1 74	2 69	2 76
Huron	5,572,443	5,630,301	46,058,244	46,527,568	2 04	1 97	2 53	2 56
Bruce	3,912,542	4,104,874	31,878,477	32,590,118	1 65	1 66	2 16	2 30
Totals	12,611,995	12,638,402	107,426,307	107,830,304	1 88	1 79	2 44	2 51
Grey	4,796,716	4,903,497	36,227,793	36,469,948	1 34	1 27	1 89	1 89
Simcoe	3,987,536	4,318,500	40,164,763	40,971,872	2 01	1 88	2 58	2 58
Totals	8,784,252	9,221,997	76,392,556	77,441,820	1 59	1 60	2 16	2 26
Middlesex	6,015,884	5,547,893	53,678,215	53,770,030	2 61	2 56	3 31	3 30
Oxford	3,802,970	3,548,079	35,070,864	35,154,835	2 56	2 67	3 32	3 50
Brant	1,579,562	1,598,778	16,483,934	16,845,472	2 45	2 70	3 06	3 28
Perth	3,744,405	3,821,420	32,154,011	34,289,634	2 12	2 34	2 58	2 97
Wellington	3,896,118	4,078,722	33,555,806	34,861,488	1 94	2 05	2 48	2 58
Waterloo	2,085,930	2,093,426	21,779,728	22,463,239	2 23	2 19	2 89	2 74
Dufferin	1,541,638	1,520,068	13,886,987	13,851,558	1 50	1 43	2 28	2 10
Totals	22,666,507	22,208,386	206,609,545	211,236,256	2 23	2 25	2 90	2 94
Lincoln	1,291,989	1,383,222	14,425,496	14,621,369	2 16	2 39	2 66	2 88
Wentworth	2,066,779	2,055,322	21,492,100	21,926,687	2 73	2 69	3 62	3 39
Halton	1,574,947	1,434,442	15,793,535	14,639,543	2 34	2 32	2 98	3 01
Peel	1,952,499	2,145,357	21,422,556	22,259,101	2 62	2 82	3 10	3 44
York	4,251,109	4,103,439	47,313,038	44,346,965	3 15	3 03	3 96	3 63
Ontario	3,446,651	3,384,931	30,608,421	31,540,134	2 86	2 78	3 55	3 39
Durham	2,222,885	2,328,347	23,216,004	24,762,009	2 61	2 98	3 22	3 53
Northumberland	2,302,157	2,543,224	23,132,750	25,284,453	1 87	2 09	2 24	2 56
Prince Edward	1,365,200	1,420,607	13,902,883	14,528,684	1 91	2 34	2 46	2 95
Totals	20,474,216	20,798,891	211,306,783	213,908,945	2 57	2 72	3 18	3 29
Lennox and Addington	1,415,328	1,678,187	14,647,561	16,277,697	1 40	1 33	2 23	2 12
Frontenac	1,556,158	1,764,648	13,812,042	15,080,187	1 46	1 24	1 97	1 97
Leeds and Grenville	3,274,861	3,383,691	30,559,026	29,945,765	1 24	1 27	1 92	2 18
Dundas	1,170,348	1,337,545	12,293,342	13,521,428	1 75	1 81	2 46	2 63
Stormont	1,069,731	1,154,348	9,591,637	9,997,698	1 46	1 43	2 40	2 00
Glengarry	1,313,884	1,467,639	11,735,647	12,513,665	1 27	1 37	1 95	2 42
Prescott	1,089,364	1,147,800	10,724,783	10,454,317	1 64	1 49	2 08	2 20
Russell	771,052	705,147	6,682,627	6,673,010	1 69	1 20	2 31	2 01
Carleton	2,460,954	2,516,289	26,974,363	24,832,486	1 54	2 09	2 58	2 82
Renfrew	2,108,768	2,026,273	12,797,934	12,671,824	0 82	0 78	1 90	1 74
Lanark	1,799,258	1,917,772	15,915,220	15,432,681	0 69	0 93	1 12	1 45
Totals	18,029,706	19,099,339	165,734,182	167,400,758	1 36	1 32	2 09	2 16
Victoria	1,924,849	2,097,424	18,298,647	19,121,459	1 71	1 88	2 72	2 78
Peterborough	1,561,176	1,707,348	16,024,326	16,964,236	1 50	1 39	2 27	2 25
Haliburton	243,032	208,436	1,586,456	1,467,812	0 40	0 30	1 46	1 53
Hastings	2,703,407	3,295,860	24,863,562	26,216,099	1 72	1 75	2 51	2 60
Totals	6,432,464	7,309,068	60,772,991	63,769,606	1 51	1 61	2 45	2 57
Muskoka	457,215	468,283	3,395,101	3,312,320	0 36	0 30	1 59	1 51
Parry Sound	323,189	214,402	2,273,416	1,589,128	0 38	0 47	1 67	1 75
Nipissing	77,892		646,559		0 55		2 16	
Algoma	406,745	315,181	3,010,116	2,483,065	0 45	0 81	1 58	1 85
Totals	1,265,041	997,866	9,325,192	7,384,513	0 41	0 51	1 70	1 70
The Province	104,086,626	105,731,288	970,927,035	982,210,664	1 98	1 96	2 72	2 80

FARM VALUES—AVERAGE PER ACRE.

TABLE III. Showing by County Municipalities and groups of Counties the average value per acre occupied of Farm Land, Buildings, Implements and Live Stock in Ontario for the years 1889 and 1890.

Counties.	Lands.		Buildings.		Implements.		Live Stock.		Total Property.	
	1890.	1889.	1890.	1889.	1890.	1889.	1890.	1889.	1890.	1889.
		$ c.		$ c.		$ c.		$ c.		$ c.
Essex	38 56	37 99	9 82	9 90	2 87	2 55	5 86	5 46	57 11	55 90
Kent	42 19	41 69	9 76	9 34	2 76	2 78	6 20	5 72	60 91	59 53
Elgin	39 97	40 38	11 44	10 91	2 76	3 01	6 53	6 14	60 70	60 44
Norfolk	29 49	30 11	10 35	10 39	2 64	2 70	4 51	4 89	46 99	48 09
Haldimand	33 40	33 89	12 32	12 51	3 39	3 40	6 30	6 39	55 41	56 19
Welland	37 11	37 85	13 66	13 36	3 47	3 75	6 14	6 24	60 38	61 20
Group	37 40	37 50	10 87	10 69	2 90	2 93	5 92	5 74	57 09	56 86
Lambton	30 35	30 05	7 52	7 01	2 09	1 98	4 74	4 39	44 70	43 43
Huron	36 94	37 71	10 79	10 45	2 95	3 00	6 97	7 04	57 65	58 20
Bruce	25 05	25 55	7 27	7 42	2 06	2 22	4 81	5 07	39 19	40 26
Group	30 73	31 14	8 57	8 37	2 38	2 4[illegible]	5 54	5 57	47 22	47 50
Grey	21 02	21 00	6 65	6 71	2 01	2 10	4 53	4 63	34 21	34 44
Simcoe	27 97	27 65	7 71	7 93	2 26	2 39	4 18	4 47	42 12	42 44
Group	24 31	24 17	7 15	7 29	2 13	2 24	4 37	4 56	37 96	38 26
Middlesex	46 15	46 77	13 52	13 55	3 31	3 28	7 95	7 32	70 93	70 92
Oxford	47 41	48 57	15 55	14 99	3 35	3 37	8 06	7 51	74 37	74 44
Brant	47 46	49 54	17 76	17 40	3 77	3 84	7 31	7 42	76 30	78 20
Perth	38 98	42 68	12 58	12 75	3 30	3 36	7 23	7 38	62 09	66 17
Wellington	33 66	34 74	10 93	11 28	2 68	3 09	6 21	6 51	53 48	55 62
Waterloo	44 75	47 07	15 84	15 59	3 76	3 87	6 82	6 84	71 17	73 37
Dufferin	25 79	25 50	6 98	7 37	2 05	2 00	4 35	4 30	39 17	39 17
Group	40 52	41 96	12 95	12 97	3 13	3 22	6 97	6 83	63 57	64 98
Lincoln	46 66	46 64	18 03	18 48	3 87	4 37	6 74	7 26	75 30	76 75
Wentworth	49 83	50 83	17 17	17 65	4 04	4 40	7 56	7 54	78 60	80 42
Halton	44 65	41 14	15 40	14 35	3 50	3 36	7 04	6 39	70 59	65 24
Peel	48 16	49 43	15 78	16 59	3 62	3 90	6 77	7 46	74 33	77 38
York	59 73	55 70	17 04	15 24	3 78	3 99	7 95	7 64	88 50	82 57
Ontario	38 91	41 30	12 48	11 88	3 07	3 04	6 91	6 75	61 37	62 97
Durham	40 80	45 89	13 16	11 85	2 97	3 17	6 03	6 32	62 96	67 23
Northumberland	33 04	36 63	11 87	12 39	3 10	3 06	5 31	5 82	53 32	57 90
Prince Edward	37 67	39 82	12 82	13 42	3 64	3 41	5 89	6 14	60 02	62 79
Group	44 63	45 55	14 60	14 21	3 45	3 56	6 72	6 82	69 40	70 14
Lennox and Addington	22 79	24 88	7 23	8 55	1 88	1 93	3 41	4 07	35 31	39 43
Frontenac	12 51	13 92	4 45	4 37	1 11	1 33	2 29	2 60	20 36	22 22
Leeds and Grenville	25 07	24 72	9 49	8 75	2 28	2 23	4 42	4 55	41 26	40 25
Dundas	32 83	36 22	11 18	12 32	2 91	2 93	4 94	5 65	51 86	57 12
Stormont	23 14	24 95	8 48	8 45	2 26	2 36	4 25	4 67	38 13	40 43
Glengarry	24 74	27 04	8 88	8 81	2 65	2 41	4 57	5 09	40 84	43 35
Prescott	24 78	23 28	6 90	7 12	2 07	2 18	3 81	4 02	37 56	36 60
Russell	17 02	16 63	4 61	5 74	1 78	1 37	3 05	2 81	26 46	26 55
Carleton	32 36	28 75	8 95	8 54	2 32	2 37	4 38	4 47	48 01	44 13
Renfrew	8 18	7 91	2 76	2 87	1 01	1 04	2 36	2 25	14 31	14 07
Lanark	14 50	13 88	5 20	4 94	1 39	1 40	2 69	2 87	23 78	23 09
Group	19 68	19 72	6 54	6 58	1 79	1 80	3 42	3 62	31 43	31 72
Victoria	21 16	22 59	5 73	5 60	1 80	1 77	3 37	3 69	32 06	33 65
Peterborough	19 66	19 94	5 60	6 35	1 47	1 63	2 89	3 12	29 62	31 04
Haliburton	1 77	1 64	0 48	0 48	0 14	0 14	0 43	0 37	2 82	2 63
Hastings	16 15	16 33	5 05	5 40	1 52	1 54	2 77	3 35	25 49	26 62
Group	14 89	15 33	4 34	4 61	1 28	1 31	2 43	2 75	22 94	24 00
Muskoka	4 11	3 92	1 21	1 18	0 38	0 42	0 89	0 91	6 59	6 43
Parry Sound	3 24	3 09	0 75	0 66	0 29	0 26	0 71	0 63	4 99	4 64
Nipissing	3 05	.....	0 73	.....	0 19	.....	0 54	.....	4 51	.....
Algoma	4 22	5 00	1 25	1 12	0 47	0 41	0 93	0 95	6 87	7 48
Group	3 73	3 99	1 02	1 01	0 36	0 37	0 80	0 84	5 91	6 21
The Province	27 79	28 66	8 63	8 73	2 25	2 34	4 64	4 79	43 31	44 52

MARKET PRICES.

TABLE IV. Showing the average price of Agricultural Products at the leading markets of Ontario for July-December, 1890, and the average for the half year, and for the Province.

Products.	Belleville.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	Peterborough.	St. Thomas.	Stratford.	Toronto.	The Province.
FALL WHEAT: per bush.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
July	75.0	91.2	100.0	88.4	....	95.0	96.9	92.5	94.5	102.7	93.1	93.5	95.0	98.1	95.6
August	80.8	88.0	100.0	93.0	....	94.8	100.1	92.5	93.3	105.0	93.0	92.7	93.8	96.8	94 8
September	80.8	94.0	100.0	94.0	....	94.8	93.9	95.0	94.0	100.0	98.8	96.5	92.8	99.0	96.0
October	81.3	89.4	97.0	90.6	91.0	93.0	94.9	97.0	90.0	102.5	95.4	92.3	92.5	94.7	93.3
November	95.5	92.0	95.0	92.5	91.0	92.3	92.5	97.5	91.9	97.5	95.7	91.6	93.3	96.3	94.3
December	95.5	89.4	95.0	88.8	87.5	90.0	92.3	93.8	88.1	95.9	90.0	88.4	88.4	94.0	91.5
Average	84.8	90.6	97.7	91.3	89.4	93.3	95.2	94.7	91.9	101.0	94.5	91.7	92.7	96.5	94.2
SPRING WHEAT: per bush.															
July	95.8	91.5	100.0	. . .	....	90.0	95.1	87.0	93.3	102.7	89.9	...	95.0	92.6	93.4
August	93.8	86.6	100.0	. ..	....	89.6	99.3	87.6	93.4	105.0	91.6	....	93.8	89.3	92.0
September	92.5	91.8	100.0	91.3	....	89.1	94.4	90.0	94.0	100.0	95.5	....	92.8	90.6	92.4
October	91.7	88.3	97.0	88.3	90.0	88.0	91.8	88.6	89.4	102.5	92.9	....	92.5	89.2	90.4
November	96.5	92.0	95.0	91.8	87.4	87.3	91.7	89.0	91.3	97.5	92.9	....	93.3	93.3	92.4
December	96.5	89.3	95.0	87.8	84.6	85.0	90.1	81.5	88.0	96.9	86.2	....	88.1	86.3	87.9
Average	94.3	89.7	97.7	89.9	86.4	88.2	93.7	87.3	91.5	101.1	91.7	....	92.7	90.1	91.3
BARLEY: per bush.															
July	40.0	44.7	49.3	39.9	....	37.5	43.5	37.5	42.0	46.8	37.0	47.5	40 3	50.1	45.3
August	43.1	45.5	51.0	39.6	....	41.3	50.8	37.5	44.9	47.5	38.5	47.5	40.9	50.2	46.9
September	52.5	54.2	51.0	47.5	....	53.4	59.9	46.7	47.8	45.0	46.5	47.5	41.3	61.0	54.5
October	55.0	50.7	48.9	40.8	55 0	52.4	58.4	46 0	43.5	47.5	50.7	47.5	43.0	57.7	51.7
November	56.5	54.1	47.5	40.3	50.5	53.0	54.8	50.0	47.8	51.7	47.4	48.1	49.8	56.7	52.1
December	56.5	53.7	47.5	39.7	46.5	49.0	50.3	50.0	51.8	53.1	48.2	48.3	43.8	50.8	50.4
Average	51.0	50.3	49.2	41.6	49.2	47.5	53.5	44.9	46.3	48.6	46.0	47.9	43.0	54.4	50.2
OATS: per bush.															
July	40.2	38.4	42.0	40.7	....	38.0	38.1	37.0	40.8	45.6	37.8	45.0	39.9	44.6	42.0
August	37.4	40.0	43.5	40.6	....	40.4	41.6	39.6	41.4	47.9	40.8	44.5	39.9	46.2	43.4
September	38.5	34 9	38.5	35.8	....	38.5	35.6	34.5	38.6	39.1	37.0	42.5	33.9	43.0	39.6
October	37.7	35.5	42.3	38.3	39.0	36.5	36.5	36.0	36.3	38.6	38.2	42.5	35.0	42.3	40.3
November	36.2	39.9	43.8	39.1	37.3	36.5	37.3	35.8	40.5	39.7	39.5	39.4	38.0	44.2	41.0
December	36.5	40.6	43.5	38.5	39.0	40.8	39.8	36.8	39.6	41.9	42.0	37.8	39.5	45.3	41.7
Average	37.7	38.1	42.3	38.7	38.2	38 3	38.2	36.7	39.6	42.7	39.1	41.0	37.7	44.3	41.1
RYE: per bush.															
July	42.5	45.0	50.0	....	....	43.1	45.0	39.0	56.0	42.5	40.0	....	.. .	47.8	49.2
August	44.4	.....	50.0	.....	....	42.0	53.0	40.0	56.0	.....	.. .	....	....	46.0	50.1
September	51.8	45.0	50.0	.....	....	42.5	50.8	42.5	57.3	.....	41.0	....	....	....	52.0
October	54.0	53.0	51.5	.....	55.0	42.5	57.3	45.0	55.1	.....	46.8	....	. ..	53.7	52.6
November	60.0	.....	52.5	....	54.3	49.6	57.6	55.0	53.7	.....	54.0	....	....	56.9	55.1
December	60.0	.....	52.5	.....	55.0	52.0	56.5	55.0	55.6	....	....	....	....	57.4	56.2
Average	52.4	48.2	51.1	.....	54.7	45.1	53.7	45.8	55.6	42.5	46.4	....	....	53.1	52.7
PEASE: per bush.															
July	56.0	55.3	71.7	57.5	....	56.6	60.4	61.5	56.4	61.3	59.6	57.5	61.3	59 4	58.8
August	56.8	56.8	70.0	50.6	....	56.0	63.7	61.5	55.7	62.5	59.5	54.2	60.9	61.8	59.1
September	57.5	60.8	70.0	52.5	...	60.5	60.3	62.0	60.4	60.0	60.0	52.5	59.0	65.2	62.0
October	59.0	58.3	62.5	51.7	59.0	58.5	61.3	62.5	59.2	61.3	59.7	57.5	57.8	62.4	60.3
November	57.5	58.8	57.5	53.3	57.4	57.5	61.0	55.0	58.5	62.5	60.0	59.4	59.6	64.3	60.4
December	57.5	59.4	62.5	54.2	57.5	59.4	60.9	55.0	60.9	60.0	62.4	60.0	60.3	62.5	60.7
Average	57.3	58.2	65.3	52.9	57.6	58.0	61.2	60.6	58.5	61.3	60.2	57.1	59.8	62.8	60.3

TABLE IV. MARKET PRICES.—*Continued.*

Products.	Belleville.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	Peterborough.	St. Thomas.	Stratford.	Toronto.	The Province.
CORN: (in ear) per bush.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
October	34.0	27.8	.....	24.4	....	....	33.2	....	31.3	33.1	....	32.5	....	....	30.7
November	....	28.3	.....	24.1	....	...	35.0	....	29.5	33.8	....	31.6	....	....	29.8
December	....	28.3	.....	24.2	....	....	35.9	....	31.0	33.5	....	31.3	....	....	31.0
Average	34.0	28.1	.....	24.2	....	....	34.9	....	30.6	33.5	....	31.7	....	....	30.5
BUCKWHEAT: per bush.															
October	....	45.0	44.5	.....	35.0	....	25.3	35.0	46.1	.....	....	....	....	....	42.2
November	....	.....	40.0	.....	35.5	....	40.0	30.0	45.4	.....	....	....	....	....	42.8
December	....	.....	42.5	....	36.5	....	38.2	30.0	48.1	.....	....	....	....	....	43.8
Average	....	45.0	42.5	.....	35.9	....	34.3	32.5	46.6	.....	....	....	....	....	43.0
BEANS: per bush.															
October	....	112.5	175.0	111.7	....	....	.....	....	127.0	.....	....	....	....	....	132.4
November	....	.....	175.0	105.0	....	....	.....	....	122.5	.....	....	....	....	....	126.9
December	....	.....	203.1	103.8	....	....	.....	....	116.6	.....	....	....	....	....	126.3
Average	....	112.5	183.7	106.9	....	....	.....	....	121.8	.....	....	....	....	....	128.5
POTATOES: per bush.															
October	48.3	50.7	39.3	51.2	....	35.3	48.3	29.5	46.7	32.9	42.0	50.0	34.7	45.1	43.8
November	43.3	47.2	40.6	47.5	32.5	35.0	45.6	27.5	41.4	34.1	36.8	47.6	35.0	44.9	41.9
December	43.3	48.0	45.0	51.8	33.3	38.8	48.7	30.0	40.1	40.6	....	47.3	36.6	54.7	47.0
Average	44.7	49.1	41.5	49.9	32.9	36.3	47.8	29.0	42.6	35.6	40.5	47.8	35.4	48.4	44.3
CARROTS: per bush.															
October	....	40.0	45.0	... ..	30.0	....	33.3	....	35.0	.....	....	....	....	28.8	33.1
November	....	.....	45.0	.....	37.5	....	33.3	....	27.5	24.5	....	....	....	33.7	32.0
December	....	.....	45.0	....	....	....	33.3	....	26.3	25 0	....	....	...	30.9	30.1
Average	....	40.0	45.0	.....	36.0	....	33.3	....	29.4	24.7	....	....	....	31.2	31.5
TURNIPS: per bush.															
October	....	15.0	32.5	.....	20.0	17.5	33.3	....	25.0	.....	....	....	....	27.7	26.7
November	....	.....	28.8	.....	18.8	11.1	33.3	....	25.0	17.8	....	....	....	24.5	24.0
December	....	.....	27.5	.....	....	9.0	33.3	....	34.2	18.3	...	....	....	22.6	26.0
Average	....	15.0	29.8	.....	19.0	12.9	33.3	....	28.3	18.0	....	....	....	24.9	25.6
WOOL: per lb.															
July	....	19.8	19.0	19.5	....	21.3	19.0	19.0	21.3	17.9	20.0	19.0	....	23.0	20.6
August	....	20.2	19.0	19 7	....	21.3	19.0	19.0	21.0	18.3	. .	....	....	23.6	21.0
September	....	20.0	19.0	20.0	....	21.3	19.0	19.0	19.0	19.0	19.0	....	....	23.1	20.4
October	19.0	19.4	19.0	19.0	....	21.3	19.0	19.0	19.5	19.0	19.0	....	....	22.9	20.5
November	23.5	20.7	19.0	20.5	....	21.3	18.4	19.0	18.5	19.0	19.0	....	....	23.0	20.5
December	23.5	20.2	19.0	19.5	....	21.3	17.8	19.0	18.0	18.6	....	....	....	23.1	20.1
Average	23.0	20.0	19.0	19.6	....	21 3	18.7	19.0	19.7	18.5	19.1	19.0	....	23.1	20.5
HAY: per ton.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c	$ c.	$ c.	$ c.	$ c.	$ c.
July	6 75	6 81	8 50	7 75	....	6 60	8 25	7 25	7 46	10 80	....	7 00	6 40	9 93	8 69
August	6 33	6 46	7 13	6 75	....	6 50	8 38	6 50	7 53	8 91	....	6 50	5 50	8 78	7 88
September	6 50	6 55	7 50	7 00	....	7 00	6 92	6 50	7 47	8 67	8 00	6 50	5 25	9 00	7 96
October	6 75	7 10	7 50	7 00	....	7 50	7 00	6 50	7 40	9 21	7 40	6 50	4 85	9 08	8 06
November	6 00	6 25	7 50	6 67	....	7 25	6 67	6 50	7 39	9 14	6 50	6 63	5 38	8 96	7 90
December	6 00	6 31	6 50	.....	....	6 50	5 50	6 50	6 56	9 00	...	6 65	5 50	8 17	7 21
Average	6 38	6 65	7 40	6 94	....	6 90	6 61	6 62	7 29	9 40	7 33	6 62	5 49	8 99	7 95

VALUES—FALL AND SPRING WHEAT.

TABLE V. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Fall and Spring Wheat in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90.

Counties.	Fall wheat.			Spring wheat.		
	1890.	1889.	1882-90.	1890.	1889.	1882-90.
	$	$	$	$	$	$
Essex	403,403	406,676	543,923	35,299	7,896	21,724
Kent	909,200	742,660	1,026,539	133,731	33,133	47,132
Elgin	788,128	556,238	756,994	21,371	6,532	21,458
Norfolk	581,870	407,017	520,783	9,619	5,311	9,991
Haldimand	417,047	425,283	463,285	73,970	20,357	38,128
Welland	325,292	251,341	314,515	9,631	2,364	16,778
Totals	3,424,940	2,789,215	3,626,039	283,621	75,593	155,211
Lambton	514,298	539,359	581,166	97,855	20,083	78,190
Huron	932,124	639,448	1,133,720	139,578	25,795	193,491
Bruce	670,253	422,891	806,228	191,067	85,462	163,968
Totals	2,116,675	1,601,698	2,521,114	428,500	131,340	435,649
Grey	314,543	294,444	472,523	409,628	252,528	513,564
Simcoe	822,005	887,419	997,260	443,186	397,429	470,791
Totals	1,136,548	1,181,863	1,469,783	852,814	649,957	984,355
Middlesex	1,286,618	777,286	1,265,064	77,964	16,284	131,092
Oxford	754,238	515,250	684,479	107,328	22,158	125,857
Brant	441,436	303,205	473,888	24,117	733	14,678
Perth	600,339	467,593	761,198	157,273	28,079	157,069
Wellington	217,741	224,018	441,993	334,649	108,509	263,164
Waterloo	656,169	539,738	713,160	43,393	5,089	62,780
Dufferin	83,905	59,169	171,126	344,303	194,959	266,927
Totals	4,040,446	2,886,259	4,510,908	1,089,027	375,811	1,021,567
Lincoln	299,796	296,914	336,296	31,952	10,405	27,186
Wentworth	382,651	324,450	484,510	67,043	10,308	34,829
Halton	245,433	400,640	363,205	111,127	37,594	52,688
Peel	271,964	383,016	472,479	313,881	123,578	198,668
York	484,239	564,785	699,954	390,419	282,073	396,414
Ontario	82,937	83,038	181,647	491,682	600,793	705,614
Durham	87,512	75,287	68,014	346,262	343,816	533,250
Northumberland	247,378	209,572	206,893	288,022	179,484	341,905
Prince Edward	72,473	37,055	36,595	81,078	34,703	78,859
Totals	2,174,383	2,374,757	2,849,593	2,121,466	1,622,754	2,369,413
Lennox and Addington	47,447	43,790	34,362	61,219	31,271	76,503
Frontenac	10,256	13,478	28,150	90,094	81,218	114,146
Leeds and Grenville	38,258	60,307	82,023	116,733	108,721	180,664
Dundas	4,027	6,398	17,985	51,437	45,827	74,371
Stormont	1,436	2,184	10,339	51,317	51,286	70,254
Glengarry	766	1,655	8,434	83,650	91,597	111,609
Prescott	509	.....	836	111,669	71,723	113,067
Russell	558	3,748	3,524	44,191	42,481	59,354
Carleton	14,072	5,902	20,826	245,839	308,226	324,921
Renfrew	7,481	4,464	15,650	297,391	404,856	358,356
Lanark	25,839	62,596	54,075	131,711	137,422	187,155
Totals	150,649	204,522	276,204	1,285,251	1,374,128	1,670,400
Victoria	40,716	67,723	140,408	417,837	321,422	432,530
Peterborough	125,140	141,962	178,693	306,286	245,963	305,898
Haliburton	3,472	2,845	1,928	19,483	17,971	15,691
Hastings	211,644	233,593	160,785	111,778	103,829	201,156
Totals	380,972	446,123	481,814	855,384	689,185	955,275
Muskoka	452	1,640	1,012	15,110	10,616	18,354
Parry Sound	1,849	398	702	12,001	6,567	19,974
Nipissing	260	.....	29	3,395	.....	377
Algoma	12,701	7,173	8,146	68,836	83,729	107,430
Totals	15,262	9,211	9,889	99,342	100,912	146,135
The Province	13,439,875	11,493,648	15,745,344	7,015,405	5,019,680	7,738,005

VALUES—BARLEY AND OATS.

TABLE VI. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Barley and Oats in Ontario in the years 1889 and 1890, with the yearly average for the nine years 1882-90.

Counties.	Barley.			Oats.		
	1890.	1889.	1882-90.	1890.	1889.	1882-90.
	$	$	$	$	$	$
Essex	89,163	45,480	46,301	431,053	353,601	413,531
Kent	105,287	111,091	99,603	413,251	425,705	465,432
Elgin	95,834	50,072	70,743	364,447	359,753	438,519
Norfolk	65,402	61,844	87,172	247,459	217,625	305,660
Haldimand	99,873	126,548	175,563	207,904	243,416	268,685
Welland	29,614	29,532	48,436	156,549	204,537	218,011
Totals	485,173	424,567	527,818	1,820,663	1,804,637	2,109,838
Lambton	181,047	171,339	211,650	552,445	458,485	521,780
Huron	411,322	379,110	419,953	1,213,459	974,191	1,030,457
Bruce	217,784	212,832	272,921	908,722	591,517	712,101
Totals	810,153	763,281	904,524	2,674,626	2,024,193	2,264,338
Grey	198,940	194,975	306,632	1,244,559	1,039,745	1,011,762
Simcoe	362,904	480,549	438,940	942,316	879,850	781,930
Totals	561,844	675,524	745,572	2,186,875	1,919,595	1,793,692
Middlesex	218,332	177,871	225,161	1,036,743	937,841	997,628
Oxford	227,532	228,622	281,348	711,492	699,433	727,303
Brant	271,144	315,010	281,713	241,502	204,789	237,472
Perth	258,164	237,910	288,695	1,001,314	825,606	834,172
Wellington	467,966	580,939	552,434	1,219,876	1,079,374	950,226
Waterloo	310,757	302,261	285,574	540,964	461,573	482,457
Dufferin	156,900	152,341	166,639	434,450	363,962	362,816
Totals	1,910,795	1,994,954	2,081,474	5,186,341	4,572,578	4,592,074
Lincoln	50,961	51,418	60,580	172,128	163,019	210,834
Wentworth	168,477	191,893	201,026	322,939	289,543	374,700
Halton	144,793	213,498	203,051	257,352	254,791	245,933
Peel	434,507	588,113	538,021	454,503	436,446	397,206
York	561,135	948,234	904,124	999,997	888,404	911,346
Ontario	360,136	645,144	603,028	681,864	744,749	671,608
Durham	326,354	674,200	677,231	385,655	406,177	426,865
Northumberland	288,091	513,980	552,858	357,541	315,024	320,050
Prince Edward	310,302	468,010	454,278	155,414	122,294	134,422
Totals	2,644,756	4,294,490	4,194,197	3,787,393	3,620,447	3,692,964
Lennox and Addington	224,532	418,027	472,278	231,076	226,042	224,867
Frontenac	118,873	181,293	228,083	288,808	281,699	280,550
Leeds and Grenville	76,079	109,720	147,217	682,705	680,801	736,612
Dundas	54,377	60,120	108,715	310,109	298,190	371,189
Stormont	37,149	21,711	36,364	257,112	217,202	298,002
Glengarry	25,254	25,651	28,023	286,875	265,473	341,151
Prescott	55,275	47,867	42,710	325,032	234,963	289,916
Russell	26,324	23,267	20,265	269,952	158,900	210,824
Carleton	116,441	119,345	125,974	746,431	659,092	747,988
Renfrew	15,949	28,164	19,061	478,300	601,231	459,081
Lanark	37,823	48,098	40,995	451,739	383,636	407,821
Totals	788,076	1,083,263	1,269,685	4,328,139	4,017,229	4,368,001
Victoria	283,742	441,651	421,601	521,710	515,951	461,551
Peterborough	79,954	165,132	176,404	361,999	372,110	333,530
Haliburton	3,139	3,074	3,645	64,107	66,167	50,010
Hastings	239,903	429,311	490,526	461,244	488,440	438,368
Totals	606,738	1,039,168	1,092,176	1,409,060	1,442,668	1,283,459
Muskoka	5,703	4,128	6,295	115,426	104,438	92,287
Parry Sound	8,262	4,421	8,144	80,571	50,074	53,349
Nipissing	2,172	.....	241	20,155	.....	2,240
Algoma	7,613	6,215	8,234	78,485	69,763	58,473
Totals	23,750	14,764	22,914	294,637	224,275	206,349
The Province	7,831,285	10,290,011	10,838,360	21,687,734	19,625,622	20,310,715

VALUES—RYE AND PEASE.

TABLE VII. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Rye and Pease in Ontario in the years 1889 and 1890, with the yearly avarage for the nine years 1882-90.

Counties.	Rye.			Pease.		
	1890.	1889.	1882-90.	1890.	1889.	1882-90.
	$	$	$	$	$	$
Essex	7,821	8,065	9,210	44,603	33,071	44,151
Kent	16,971	9,026	8,785	116,284	137,278	122,414
Elgin	9,998	18,016	13,577	150,324	128,301	140,503
Norfolk	65,527	39,117	61,227	230,027	209,521	183,396
Haldimand	4,161	2,380	8,026	174,504	137,683	153,956
Welland	1,921	5,416	6,069	45,662	46,923	43,557
Totals	106,399	82,020	106,894	761,404	692,777	687,957
Lambton	4,626	2,819	2,435	145,220	100,335	111,791
Huron	2,419	1,771	2,701	554,924	400,228	443,963
Bruce	10,161	4,449	4,829	640,730	406,827	522,122
Totals	17,206	9,039	9,965	1,340,874	907,390	1,077,876
Grey	7,444	4,164	5,838	638,380	637,103	605,344
Simcoe	25,136	22,396	25,157	488,573	415,581	419,861
Totals	32,580	26,560	30,995	1,126,953	1,052,684	1,025,205
Middlesex	8,085	4,729	5,131	293,187	232,385	261,631
Oxford	12,665	13,552	11,114	195,552	147,971	200,273
Brant	14,437	9,342	9,388	147,944	128,419	112,685
Perth	625	448	1,651	346,964	235,319	319,647
Wellington	5,573	7,710	8,622	551,899	434,428	519,893
Waterloo	5,312	2,490	5,415	250,835	166,410	200,891
Dufferin	2,728	1,758	7,532	194,428	157,477	153,268
Totals	49,425	40,029	48,853	1,980,809	1,502,409	1,768,288
Lincoln	4,088	1,196	3,980	72,442	50,053	54,380
Wentworth	7,628	8,693	9,863	166,854	124,077	135,173
Halton	6,147	4,225	5,180	163,088	114,709	139,269
Peel	5,157	7,291	15,510	256,680	155,434	179,741
York	10,904	14,174	16,757	465,507	360,949	389,069
Ontario	11,748	15,187	28,008	286,751	288,647	332,982
Durham	29,039	33,296	43,872	224,186	187,049	254,439
Northumberland	82,106	69,782	89,872	248,373	216,529	211,461
Prince Edward	46,696	79,713	72,121	249,680	189,897	140,948
Totals	203,513	233,557	285,163	2,133,561	1,687,344	1,837,462
Lennox and Addington	26,181	31,535	43,288	110,005	97,598	98,856
Frontenac	25,555	27,776	36,441	109,248	75,596	119,187
Leeds and Grenville	30,422	16,218	64,261	57,303	56,574	73,022
Dundas	5,481	9,131	18,001	18,873	10,455	22,478
Stormont	3,062	2,138	5,674	21,322	10,577	31,757
Glengarry	1,589	.....	682	43,689	26,201	63,452
Prescott	413	1,705	2,744	67,494	29,740	86,293
Russell	5,212	120	2,860	46,275	15,616	45,376
Carleton	43,477	41,285	64,078	137,635	152,321	168,191
Renfrew	82,241	64,621	76,727	284,813	314,691	261,244
Lanark	26,867	22,212	51,564	138,885	144,823	148,467
Totals	250,500	216,741	366,320	1,035,542	934,192	1,118,323
Victoria	16,680	12,245	12,412	229,138	196,941	200,975
Peterborough	45,446	14,251	31,097	215,126	177,568	176,717
Haliburton	3,522	1,342	2,628	24,025	16,621	18,565
Hastings	89,754	84,152	126,151	269,705	234,319	200,493
Totals	155,402	111,990	172,288	737,994	625,449	596,750
Muskoka	3,249	2,258	4,323	50,054	34,200	35,534
Parry Sound	1,956	1,637	4,103	30,143	15,288	18,813
Nipissing	821	.....	91	8,730	.....	970
Algoma	2,832	4,894	2,143	73,692	72,912	60,004
Totals	8,858	8,789	10,660	162,619	122,400	115,321
The Province	823,883	728,725	1,031,138	9,279,756	7,524,645	8,227,182

VALUES—CORN, BUCKWHEAT AND BEANS.

TABLE VIII. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Corn, Buckwheat and Beans in Ontario in the years 1889 and 1890, with the yearly average for the six years 1885-90.

Counties.	Corn.			Buckwheat.			Beans.		
	1890.	1889.	1885-90.	1890.	1889.	1885 90.	1890.	1889.	1885-90.
	$	$	$	$	$	$	$	$	$
Essex	873,362	286,804	657,101	7,350	3,775	6,955	24,278	8,874	12,921
Kent	613,583	285,022	489,396	12,700	4,433	7,740	632,382	242,435	304,439
Elgin	247,688	166,447	275,361	18,873	10,475	11,716	64,123	23,906	27,957
Norfolk	197,867	171,853	231,691	48,780	28,302	37,588	7,869	7,412	6,593
Haldimand	27,934	32,434	33,993	4,186	6,751	5,648	6,350	3,636	2,908
Welland	81,850	67,378	102,683	17,061	11,084	14,219	17,810	8,139	9,075
Totals	2,042,284	1,009,938	1,790,135	108,950	64,820	83,866	752,812	294,402	363,893
Lambton	172,663	66,288	126,071	7,352	2,323	3,811	7,457	5,166	6,474
Huron	45,362	24,476	32 072	3,922	967	2,241	3,566	3,370	3,260
Bruce	24,026	13,610	13,217	5,177	1,848	3,073	3,469	2,439	2,451
Totals	242,051	104,374	171,360	16,451	5,138	9,125	14,492	10,975	12,185
Grey	30,561	9,468	11,254	4,848	1,366	2,746	9,021	2,002	2,914
Simcoe	24,968	15,503	15,027	7,232	1,628	3,057	1,804	3,446	2,210
Totals	55,529	24,971	26,281	12,080	2,994	5,803	10,825	5,448	5,124
Middlesex	247,363	131,931	198,641	3,266	3,448	3,981	7,862	6,044	5,331
Oxford	193,239	94,634	147,465	6,820	3,332	4,457	3,986	5,676	4,477
Brant	108,890	82,517	89,270	6,590	3,657	5,062	6,429	868	2,890
Perth	28,031	8,630	15,130	925	508	861	321	1,824	1,101
Wellington	28,383	10 735	12,166	6,257	1,195	1,823	1,002	1,242	907
Waterloo	28,841	16,690	17,986	1,238	218	767	1,568	661	855
Dufferin	3,446	1,554	1,618	679	469	944	719	532	515
Totals	638,196	346,692	482,276	25,775	12,827	17,895	21,887	16,847	16,076
Lincoln	78,479	76,990	109,272	8,367	3,830	5,354	6,733	3,852	3,675
Wentworth	101,777	69,653	82,216	11,389	3,540	6,761	11,471	2,680	3,797
Halton	39,429	25,797	22,084	559	1,373	965	383	1,064	836
Peel	20,514	21,776	11,868	1,591	2,649	1,850	540	1,552	912
York	49,904	27,367	29,154	1,096	1,549	1,543	2,538	3,274	2,801
Ontario	51,988	40,143	42,982	11,339	5,617	5,486	5,424	1,996	3,004
Durham	34,549	35,212	25,328	37,278	15,841	17,160	9,219	4,964	5,710
Northumberland	80,861	66,837	59,198	99.673	55,666	60,903	12,366	10,675	9,719
Prince Edward	136,785	85,208	81,887	89,246	46,183	73,089	8,816	11,289	8,919
Totals	594,286	448,983	463,989	260,538	136,248	173,111	57,490	41,346	39,373
Lenuox and Add	45,806	48,570	35,288	62,681	26,848	31,510	6,542	2,882	3,199
Frontenac	41,249	27,065	27,138	23,828	13,787	15,986	3,251	6,246	6,490
Leeds & Grenville	191,219	129,420	113,824	75,176	49,083	50,115	14,884	7,083	8,646
Dundas	40,115	26,938	31,992	31,946	15,288	19,612	7,324	13,992	7,230
Stormont	38,636	18,081	21,683	28,549	14,671	22,014	5,360	7,640	4,265
Glengarry	46,076	13,569	15,161	15,219	10,629	9,104	5,962	1,882	2,448
Prescott	29,083	20,240	21,702	14.547	10,940	12,659	8,209	12,946	9,544
Russell	13,372	5,047	5,885	15,114	7,470	8,907	4,557	2,335	3,293
Carleton	51,598	26,571	24,640	27,451	43,247	32,359	17,733	11,261	10,025
Renfrew	10,843	5,785	6,403	13,817	5,972	10,844	15,928	15,670	11,520
Lanark	38,659	22,395	19,744	46,726	37,824	41,239	6,894	7,584	5,114
Totals	546,656	343,381	323,460	355,054	235,759	254,349	96,644	89,521	71,774
Victoria	13,286	16,259	11,631	18,517	5,589	5,305	3,653	1,546	1,674
Peterborough	12,138	4,930	5,883	21,851	4,752	8,408	7,248	874	2,305
Haliburton	1,793	1,233	1,342	3,772	1,435	1,659	668	697	542
Hastings	122,681	89,887	81.461	50,035	29,632	38,124	9,622	6,910	6,675
Totals	149,898	112,309	100,317	94,175	41,408	53,496	21,191	10,027	11,196
Muskoka	2,612	2,590	2,217	5,396	2,656	3,173	1,070	1,495	953
Parry Sound	683	315	458	2,452	154	923	1,054	215	320
Nipissing	409	.....	68	939	.....	157	293	.....	49
Algoma	806	1,430	930	1,290	664	687	565	912	422
Totals	4,510	4,335	3,673	10,077	3,474	4,940	2,982	2,622	1,744
The Province	4,273,410	2,395,283	3,361,491	883,100	502,668	602,585	978,323	471,188	521,365

VALUES—HAY AND CLOVER AND POTATOES.

TABLE IX. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Hay and Clover and Potatoes in Ontario in the years 1889 and 1890, with the yearly average for the six years 1885-90.

Counties.	Hay and Clover.			Potatoes.		
	1890.	1889.	1885-90.	1890.	1889.	1885-90.
	$	$	$	$	$	$
Essex	553,042	767,592	672,101	91,453	59,564	99,736
Kent	840,919	1,022,970	894,035	128,804	94,203	130,716
Elgin	827,969	1,059,636	842,958	98,697	69,146	102,706
Norfolk	578,203	675,995	543,197	88,911	66,167	92,588
Haldimand	649,269	706,694	662,462	41,167	34,664	58,429
Welland	729,468	841,444	670,436	63,406	57,078	74,758
Totals	4,178,870	5,074,331	4,285,189	512,438	380,822	558,933
Lambton	838,844	976,104	875,227	112,591	62,010	108,843
Huron	1,664,889	1,650,712	1,538,060	238,455	214,293	248,555
Bruce	1,350,944	1,363,138	1,269,556	234,387	200,838	234,476
Totals	3,854,677	3,989,954	3,682,843	585,433	477,141	591,874
Grey	1,905,178	1,814,274	1,610,666	482,444	296,011	390,927
Simcoe	1,080.858	1,272,919	1,072,143	435,437	339,903	371,983
Totals	2,986,036	3,087,193	2,682,809	917,881	635,914	762,910
Middlesex	1,507,590	1,642,903	1,474,401	255,793	118,118	211,557
Oxford	1,146,962	1,061,872	1,029,870	125,969	95,029	122,197
Brant	596,815	522,892	449,025	104,928	73,369	93,701
Perth	1,266,332	1,106,213	1,139,300	194,773	83,882	163,366
Wellington	1,438,950	1,308,398	1,352,743	365.749	279,270	297,860
Waterloo	680,774	624,119	682,902	155,619	99,377	138,609
Dufferin	497,630	539,529	462,499	239,237	141,861	183,591
Totals	7,135,053	6,805,931	6,590,740	1,442,068	890,906	1,210,881
Lincoln	616,872	650,396	609,067	62,068	45,643	71,029
Wentworth	754,884	747,282	653,035	173,632	107,403	154,962
Halton	424,681	502,962	434,846	65,017	56,234	67,795
Peel	527,761	580,966	531,175	122,814	107 171	117,307
York	1,008,338	1,113,818	1,010,662	384,200	357,283	332,213
Ontario	847,605	857,971	782,326	202,578	229,762	219,219
Durham	711,883	681,794	626,814	138,850	173,807	154,911
Northumberland	735,645	818,979	727,173	211,288	186,704	183,319
Prince Edward	422,074	525,167	427,844	80,510	68,662	92,115
Totals	6,049,743	6,479,335	5,802,942	1,440,457	1,332,669	1,392,870
Lennox and Addington	760,449	779,468	644,667	117,789	144,138	149,918
Frontenac	874,524	1.017,721	750,923	159,974	117,882	151,118
Leeds and Grenville	1,431,127	1,917,038	1,579,563	333.643	225,907	350,481
Dundas	477,851	657,343	621,910	161,979	75,945	136,828
Stormont	409,568	679,119	573,848	96,729	39,724	95,611
Glengarry	432,027	849,029	684,280	111,567	45,586	111,742
Prescott	508,657	546,764	540,634	158,596	100,857	139.968
Russell	223,610	235,837	253,819	78,137	58,455	64,783
Carleton	667,076	766,833	888,886	358,305	411,279	328,621
Renfrew	672,498	787,362	698,015	220,324	327,645	245,376
Lanark	665,622	931,154	882,730	186,652	213,585	196,708
Totals	7,123,009	9,167,668	8,119,275	1,983,695	1,761,003	1,971,154
Victoria	435,284	501,894	465,769	214,749	246,471	181,786
Peterborough	520,296	497,703	443,524	155,873	197.490	138,290
Haliburton	94,565	104,111	115,970	38,913	39,815	34,482
Hastings	1,027,021	954,298	900,547	229,395	326,630	277,752
Totals	2,127,166	2,063,006	1,925,810	638.930	810,406	632,310
Muskoka	329,694	241,716	297,980	78,360	115,499	84,203
Parry Sound	173,867	131,017	117,550	70.863	62,002	52,743
Nipissing	65,373	..	10,896	26,731	.....	4,455
Algoma	208,536	168,413	152,119	82,719	65,404	60,311
Totals	777,470	541,146	578,545	258,673	242,905	201,712
The Province	34,232,024	37,208,564	33,668,153	7,779,575	6,531,766	7,322,644

VALUES—CARROTS AND TURNIPS.

TABLE X. Showing by County Municipalities and groups of Counties the value at market prices of the total crop of Carrots and Turnips in Ontario in the years 1889 and 1890, with the yearly average for the six years 1885-90.

Counties.	Carrots.			Turnips.		
	1890.	1889.	1885-90.	1890.	1889.	1885-90.
	$	$	$	$	$	$
Essex	11,073	3,440	7,378	16,704	4,947	12,690
Kent	23,605	8,641	15,219	37,026	19,689	26,427
Elgin	24,965	14,393	16,032	36,019	25,822	27,590
Norfolk	21,648	13,104	12,974	109,662	99,513	101,105
Haldimand	8,742	8,526	8,034	7,526	15,769	9,200
Welland	4,170	7,609	7,136	13,002	11,895	13,713
Totals	94,203	55,713	66,773	219,939	177,635	190,725
Lambton	27,714	16,507	18,719	23,967	17,282	20,129
Huron	50,646	42,981	48,698	766,013	484,689	634,897
Bruce	38,549	18,590	25,760	626,072	405,149	559,433
Totals	116,909	78,078	93,177	1,416,052	907,120	1,214,459
Grey	66,480	37,969	51,094	1,035,500	668,679	870,790
Simcoe	64,970	56,770	56,037	418,166	365,580	345,431
Totals	131,450	94,739	107,131	1,453,666	1,034,259	1,216,221
Middlesex	72,626	33,586	44,926	159,986	101,779	146,215
Oxford	39,921	41,186	36,298	636,417	369,339	554,859
Brant	27,906	16,757	23,015	384,525	198,569	310,878
Perth	61,310	22,866	45,169	512,346	219,602	411,719
Wellington	43,810	17,810	26,405	1,363,850	994,903	1,287,442
Waterloo	45,951	36,022	36,031	496,814	284,659	463,450
Dufferin	10,747	13,118	12,327	279,683	211,582	214,521
Totals	302,271	181,345	224,171	3,833,621	2,380,373	3,389,084
Lincoln	11,056	9,986	10,957	24,146	20,253	20,528
Wentworth	29,512	14,469	22,772	595,704	223,013	310,408
Halton	12,172	17,035	14,252	226,935	111,209	188,094
Peel	25,715	25,908	24,885	157,677	116,140	118,447
York	104,099	62,072	75,956	478,679	301,141	345,353
Ontario	66,046	48,366	55,439	1,606,761	1,154,318	1,212,127
Durham	58,684	66,414	52,767	556,335	492,439	532,568
Northumberland	32,568	38,615	27,271	105,965	359,609	336,469
Prince Edward	5,856	5,160	4,434	9,558	3,967	7,251
Totals	345,708	288,025	288,733	3,861,760	2,782,089	3,101,255
Lennox and Addington	6,716	5,670	5,230	6,562	4,976	7,491
Frontenac	7,581	15,980	13,392	17,254	27,448	30,374
Leeds and Grenville	28,611	16,424	16,171	56,118	24,957	22,908
Dundas	10,836	3,490	5,251	5,144	4,674	3,959
Stormont	2,835	6,634	2,730	13,716	3,648	6,156
Glengarry	2,835	3,634	3,060	5,914	1,180	4,486
Prescott	3,698	3,481	4,115	5,206	7,883	10,745
Russell	23,134	15,124	14,294	60,582	38,961	34,757
Carleton	95,502	47,507	50,577	245,146	142,449	138,463
Renfrew	10,144	7,494	7,377	61,890	56,528	46,955
Lanark	21,674	10,000	11,958	46,229	52,531	42,145
Totals	213,596	135,438	134,155	503,741	365,235	348,439
Victoria	28,856	41,564	34,427	303,385	333,518	324,205
Peterborough	56,065	30,721	30,860	168,857	150,605	113,675
Haliburton	2,677	1,262	2,024	21,613	25,025	22,368
Hastings	21,427	16,897	16,639	67,976	97,993	68,891
Totals	109,025	90,444	83,890	561,831	607,141	529,139
Muskoka	7,875	8,966	6,200	76,620	110,078	81,515
Parry Sound	3,142	1,583	2,175	53,611	48,292	46,129
Nipissing	630	.....	105	8,602	.....	1,433
Algoma	1,512	2,594	2,260	52,941	28,625	39,084
Totals	13,159	13,143	10,740	191,774	186,995	168,161
The Province	1,326,321	936,925	1,008,770	12,042,384	8,440,847	10,157,483

VALUES—WHEAT TO PEASE AND CORN TO TURNIPS.

TABLE XI. Showing by County Municipalities and Groups of Counties the aggregate value of Wheat, Barley, Oats, Rye and Pease, and of Corn, Buckwheat, Beans, Hay, Potatoes, Carrots and Turnips in Ontario in 1889 and 1890, with the yearly average of the first group for nine years 1882-90, and of the second group for six years 1885-90.

Counties.	Wheat, Barley, Oats, Rye and Pease.			Corn, Buckwheat, Beans, Hay and Clover, Potatoes, Carrots and Turnips.		
	1890.	1889.	1882-90.	1890.	1889.	1885-90.
	$	$	$	$	$	$
Essex	1,011,342	854,789	1,078,820	1,577,262	1,134,996	1,468,882
Kent	1,694,724	1,458,893	1,769,905	2,289,019	1,677,393	1,867,972
Elgin	1,430,102	1,118,9 2	1,441,794	1.318,334	1,369,825	1,304,320
Norfolk	1,199,904	940,435	1,168,229	1,052,940	1,062,346	1,025,646
Haldimand	977,459	955,667	1,107,643	745,174	808,474	780,674
Welland	568,669	540,113	647,366	926,767	1,004,627	892,020
Totals	6,882,200	5,868,809	7,213,757	7,909,496	7,057,661	7,339,514
Lambton	1,495,491	1,292,420	1,507,012	1,190,588	1,145,680	1,159,274
Huron	3,253,826	2,420,543	3,224,285	2,772,853	2,421,488	2,507,783
Bruce	2,638,717	1,723,978	2,482,169	2,282,624	2,005,612	2,107,966
Totals	7,388,034	5,436,941	7,213,466	6,246,065	5,572,780	5,775,023
Grey	2,813,494	2,422,959	2,915,663	3,534,032	2,829,769	2,940,391
Simcoe	3,084,120	3,083,224	3,133,939	2,033,435	2,055,749	1,865,888
Totals	5,897,614	5,506,183	6,049,602	5,567,467	4,885,518	4,806,279
Middlesex	2,920,929	2,146,396	2,885,707	2,254 486	2,037,814	2,085,052
Oxford	2,008,807	1,626,986	2,030.374	2,153,314	1,671,068	1,899,623
Brant	1,140,580	981,498	1,129,824	1,236.083	898,569	973,841
Perth	2,364,679	1,794,9?5	2,362,342	2,064,038	1,443,525	1,776,646
Wellington	2,797,704	2,434,978	2,736,332	3,218,001	2,613,554	2,979,346
Waterloo	1,807,430	1,477,561	1,750,277	1,410,808	1,061,746	1,340,600
Dufferin	1,216,714	929.666	1,128,308	1,032,141	908,645	876,015
Totals	14,256,843	11,372,040	14,023,164	13,398,871	10,634,921	11,931,123
Lincoln	631,367	573,005	693,256	807,721	810,950	829,892
Wentworth	1,115,592	948,964	1,240,101	1,478,369	1,168,040	1,233,951
Halton	927,940	1,025,457	1,009,326	769,176	715,674	728,872
Peel	1,736,692	1,693,878	1,801,625	856,112	856,162	806,444
York	2,912,261	3,058,619	3,317,664	2,028,854	1,866,504	1,797,682
Ontario	1,915,118	2,377,558	2,522,887	2,791,741	2,338,173	2,350,583
Durham	1,399,008	1,719,825	2,003,671	1,546,798	1,470,471	1,415,258
Northumberland	1,511,511	1,504,371	1,723,039	1,578,266	1,537,085	1,404,052
Prince Edward	915,643	931,672	917,223	752,845	745,636	695,539
Totals	13,065,072	13,833,349	15,228,792	12,609,982	11,508,695	11,262,273
Lennox and Addington	700,460	818,263	950,154	1,006,575	1,012,552	877,303
Frontenac	642,834	661,060	806,557	1,127,641	1,226,129	995,421
Leeds and Grenville	1,001,500	1,032,341	1,283,799	2,110,778	2,369,912	2,141,708
Dundas	444,304	429,621	612,739	735,195	797,670	826,782
Stormont	371,398	305,098	452,390	595,393	769,517	726,307
Glengarry	441,823	410,577	553,351	619,600	925,509	830,281
Prescott	560,392	385,998	535,566	727,996	703,111	739,367
Russell	392,512	254,132	342,203	418,506	363,229	385,738
Carleton	1,303,895	1,286,171	1,451,978	1,462,811	1,449,147	1,473,571
Renfrew	1,166,175	1,418,027	1,190,119	1,005,414	1,206,456	1,026,490
Lanark	812,864	798,787	890,077	1,012,456	1,275,073	1,199,638
Totals	7,838,157	7,830,075	9,068,933	10,822,395	12,098,305	11,222,606
Victoria	1,509,823	1,555,933	1,669,477	1,067,730	1,146,841	1,024,797
Peterborough	1,133 951	1,116,986	1,202,339	944,328	887,075	712,885
Haliburton	117,748	108,020	92,467	164,001	173,578	178,387
Hastings	1,384,028	1,573,644	1,617,479	1,528,157	1,527,247	1,390,089
Totals	4,145,550	4,354,583	4,581,762	3,702,216	3,734,741	3,336,158
Muskoka	189,994	157,280	157,805	501,627	483,000	476,241
Parry Sound	134,782	78,385	105,085	305,672	243,578	220,298
Nipissing	35,533	.....	3,948	102,977	.....	17,163
Algoma	244,159	244,686	244,430	348,369	268,042	255,813
Totals	604,468	480,351	511,268	1,258,645	994,620	969,515
The Province	60,077,938	54,682,331	63,890,744	61,515,137	56,487,241	56,642,491

VALUES—ALL FIELD CROPS AND WOOL.

TABLE XII. Showing by County Municipalities and Groups of Counties the aggregate value of all Field Crops in Ontario in the years 1889 and 1890, with the yearly average (determined by combining averages in preceding table); also the value, at market price, of the total clip of Wool in 1889 and 1890, with the yearly average for the six years 1885-90.

Counties.	All field crops.			Wool.		
	1890.	1889.	Yearly average.	1890.	1889.	1885-90.
	$	$	$	$	$	$
Essex	2,588,604	1,989,785	2,547,702	17,199	15,883	16,575
Kent	3,983,743	3,136,286	3,637,877	23,271	20,512	21,347
Elgin	2,748,436	2,488,737	2,746,114	27,359	22,508	22,522
Norfolk	2,252,844	2,002,781	2,193,875	14,914	13,803	15,275
Haldimand	1,722,633	1,764,141	1,888,317	18,295	15,482	18,792
Welland	1,495,436	1,544,740	1,539,386	12,403	12,247	13,809
Totals	14,791,696	12,926,470	14,553,271	113,441	100,435	108,320
Lambton	2,686,079	2,438,100	2,666,286	29,805	24,437	25,347
Huron	6,026,679	4,842,031	5,732,068	47,785	46,827	49,215
Bruce	4,921,341	3,729,590	4,590,135	55,733	56,124	53,162
Totals	13,634,099	11,009,721	12,988,489	133,323	127,388	127,724
Grey	6,347,526	5,252,728	5,856,054	73,263	74,551	73,957
Simcoe	5,117,555	5,138,973	4,999,827	43,012	47,187	48,841
Totals	11,465,081	10,391,701	10,855,881	116,275	121,738	122,798
Middlesex	5,175,415	4,184,210	4,970,759	41,048	35,577	37,292
Oxford	4,162,121	3,298,054	3,929,997	13,244	16,886	17,719
Brant	2,376,663	1,860,067	2,103,665	11,911	11,715	13,349
Perth	4,428,717	3,238,480	4,138,988	32,223	30,899	32,507
Wellington	6,045,705	5,048,532	5,715,678	46,319	48,799	49,787
Waterloo	3,218,238	2,539,307	3,090,877	20,969	19,882	21,806
Dufferin	2,248,855	1,838,311	2,004,323	17,419	18,928	19,068
Totals	27,655,714	22,006,961	25,954,287	183,133	182,686	191,528
Lincoln	1,439,088	1,383,955	1,523,148	8,231	8,714	9,529
Wentworth	2,593,961	2,117,001	2,474,052	14,185	13,745	15,162
Halton	1,697,116	1,741,131	1,738,198	11,441	11,806	12,912
Peel	2,592,804	2,550,040	2,608,069	12,174	17,492	18,134
York	4,941,055	4,925,123	5,115,346	24,582	25,376	29,752
Ontario	4,706,859	4,715,731	4,873,470	25,958	29,890	29,908
Durham	2,915,806	3,190,296	3,418,929	18,670	21,257	22,014
Northumberland	3,089,877	3,041,456	3,127,091	17,672	20,430	22,029
Prince Edward	1,668,488	1,677,308	1,612,762	6,805	7,748	8,458
Totals	25,675,054	25,342,044	26,491,065	139,718	156,458	167,898
Lennox and Addington	1,707,035	1,860,815	1,827,457	11,322	10,639	14,178
Frontenac	1,770,475	1,887,189	1,801,978	16,137	13,563	16,767
Leeds and Grenville	3,112,278	3,402,253	3,425,507	26,228	26,857	31,191
Dundas	1,179,499	1,227,291	1,439,521	6,566	8,136	9,302
Stormont	966,791	1,074,615	1,178,697	7,451	9,156	9,505
Glengarry	1,061,423	1,336,086	1,383,632	10,678	11,699	12,870
Prescott	1,288,388	1,089,109	1,274,933	9,236	10,928	10,422
Russell	811,018	617,361	727,941	7,236	5,590	7,049
Carleton	2,766,705	2,735,318	2,925,549	21,472	26,746	26,539
Renfrew	2,171,619	2,624,483	2,216,609	33,870	35,757	33,433
Lanark	1,825,320	2,073,860	2,089,715	29,091	26,060	30,001
Totals	18,660,552	19,928,380	20,291,539	179,287	185,131	201,257
Victoria	2,577,553	2,702,774	2,694,274	20,551	20,241	22,684
Peterborough	2,076,279	2,004,061	1,945,224	13,323	15,312	16,034
Hölibourton	281,749	281,598	270,854	3,124	3,285	3,154
Hastings	2,912,185	3,100,891	3,007,568	16,697	21,487	22,950
Totals	7,847,766	8,089,324	7,917,920	53,695	60,325	64,822
Muskoka	691,621	640,280	634,046	5,961	7,079	6,518
Parry Sound	440,454	321,963	325,383	4,612	3,160	2,927
Nipissing	138,510	.....	21,111	446	.....	74
Algoma	592,528	512,728	500,243	7,923	5,501	4,953
Totals	1,863,113	1,474,971	1,480,783	18,942	15,740	14,472
The Province	121,593,075	111,169,572	120,533,235	937,814	949,901	998,819

VALUE PER ACRE—FALL WHEAT, SPRING WHEAT AND BARLEY

TABLE XIII. Showing by County Municipalities and groups of Counties the market value of crop per acre of Wheat and Barley in Ontario, in 1889 and 1890, with the yearly average for nine years 1882-90.

Counties.	Fall wheat.			Spring wheat.			Barley.		
	1890.	1889.	1882-90.	1890.	1889.	1882-90.	1890.	1889.	'82-90
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	15 54	13 88	17 47	12 14	11 63	13 00	11 30	10 60	13 92
Kent	18 84	12 91	17 33	13 06	15 42	13 37	12 05	12 26	14 79
Elgin	20 16	14 41	17 43	14 88	13 30	12 67	11 90	11 57	14 73
Norfolk	19 03	12 91	15 91	12 51	12 07	12 14	10 74	9 64	14 13
Haldimand	14 13	12 73	14 15	10 13	10 75	11 63	7 88	9 72	12 36
Welland	16 01	13 17	14 14	10 77	9 16	11 72	8 23	9 72	12 75
Group	17 68	13 32	16 37	12 04	12 79	12 50	10 31	10 60	13 52
Lambton	17 14	14 76	16 87	13 79	11 72	12 39	10 44	11 18	14 21
Huron	20 72	11 93	17 42	14 88	11 54	11 73	12 70	11 53	15 05
Bruce	20 44	11 40	17 25	13 88	10 66	12 18	13 10	9 81	14 28
Group	19 64	12 59	17 24	14 17	10 98	12 01	12 21	10 92	14 61
Grey	16 77	11 58	17 76	12 14	10 92	12 70	12 65	9 68	13 63
Simcoe	17 14	15 82	18 59	12 05	12 86	13 46	11 85	11 92	14 01
Group	17 04	14 50	18 32	12 10	12 03	13 05	12 12	11 18	13 85
Middlesex	21 38	13 08	17 69	15 79	13 39	12 50	12 30	10 82	14 63
Oxford	22 23	15 03	17 82	14 97	14 36	13 69	13 75	12 32	16 53
Brant	20 63	14 14	16 46	15 43	13 83	12 09	12 30	12 45	14 80
Perth	20 25	11 85	17 40	15 89	15 15	12 93	13 96	13 42	16 28
Wellington	17 99	13 44	17 74	16 07	13 39	13 14	13 75	13 42	15 44
Waterloo	20 16	14 94	18 28	15 25	14 10	13 02	14 91	14 21	16 75
Dufferin	17 14	12 46	17 19	13 88	10 22	12 85	12 55	10 65	13 86
Group	20 75	13 60	17 60	15 11	11 67	12 99	13 44	12 72	15 53
Lincoln	16 49	15 82	15 82	10 59	11 72	12 44	9 59	10 08	13 60
Wentworth	16 11	13 70	16 13	13 06	11 36	12 79	10 89	11 13	15 11
Halton	15 07	19 62	16 96	12 60	14 80	13 33	12 05	13 29	15 39
Peel	16 86	16 80	18 62	13 97	14 01	14 97	11 80	12 80	15 06
York	20 06	18 92	19 63	11 87	13 74	15 02	10 99	13 73	15 79
Ontario	19 97	15 65	20 21	9 59	14 45	15 03	10 54	13 02	15 49
Durham	20 63	13 44	18 53	9 68	13 48	14 59	8 63	12 32	14 51
Northumberland	19 22	11 67	18 32	9 86	9 87	12 39	8 89	10 03	12 28
Prince Edward	21 67	19 89	16 40	11 78	9 34	12 05	9 79	10 69	11 30
Group	17 66	16 24	17 82	10 85	13 23	14 26	10 30	12 18	14 23
Lennox and Addington	17 90	16 53	16 03	9 40	11 63	12 81	8 68	10 87	12 15
Frontenac	14 51	14 23	17 00	9 59	9 51	13 09	9 49	8 84	12 70
Leeds and Grenville	14 32	15 91	16 83	8 86	10 13	13 73	9 14	10 16	13 71
Dundas	14 13	18 12	17 55	12 14	11 89	16 22	10 19	10 47	16 45
Stormont	11 30	15 82	16 89	12 60	11 01	15 69	11 30	11 22	15 15
Glengarry	11 78	15 91	15 53	10 50	12 07	14 13	10 24	9 90	12 50
Prescott	11 30	.....	11 79	12 33	9 07	13 76	11 04	11 31	14 14
Russell	15 07	14 14	16 86	12 42	12 25	14 70	11 85	12 58	13 15
Carleton	18 09	15 82	14 64	9 77	16 03	14 90	12 45	12 67	15 67
Renfrew	17 90	20 86	17 47	11 23	17 27	14 65	9 49	13 77	12 98
Lanark	11 87	16 97	17 51	8 22	9 51	12 90	10 64	12 10	14 02
Group	15 14	16 33	16 70	10 23	12 90	14 18	9 90	10 67	13 25
Victoria	14 41	12 11	17 66	11 78	12 69	13 50	11 04	11 88	13 75
Peterborough	14 93	10 52	17 54	10 59	10 92	11 93	10 09	11 13	13 28
Haliburton	12 81	12 64	14 39	10 04	13 92	11 49	10 19	11 22	12 97
Hastings	17 90	17 95	17 67	10 68	10 66	13 54	8 94	10 74	12 59
Group	16 37	13 80	17 60	11 14	11 70	12 93	9 98	11 26	13 13
Muskoka	14 13	15 47	15 57	12 51	11 98	13 38	10 04	9 15	11 77
Parry Sound	11 78	13 26	14 63	10 50	11 54	14 43	10 94	9 33	12 32
Nipissing	13 00	.....	13 00	13 06	.....	13 00	11 19	.....	11 19
Algoma	18 27	13 26	18 56	14 24	16 74	17 88	10 69	11 00	14 17
Group	16 88	13 61	17 85	13 35	15 63	16 62	10 66	9 91	12 74
The Province	18 66	13 98	17 33	11 66	12 59	13 59	11 17	11 76	14 18

VALUE PER ACRE—OATS, RYE AND PEASE.

TABLE XIV. Showing by County Municipalities and groups of Counties the market value of crop per acre of Oats, Rye and Pease in Ontario in 1889 and 1890, with the yearly average for nine years 1882-90.

Counties.	Oats.			Rye.			Pease.		
	1890.	1889.	1882-90.	1890.	1889.	1882-90.	1890.	1889.	'82-90
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	10 56	10 43	13 53	8 96	9 54	11 46	10 67	9 02	11 40
Kent	11 80	11 80	14 15	11 44	11 20	11 92	9 11	9 25	11 39
Elgin	10 52	10 07	13 43	8 96	9 82	10 34	7 90	8 52	10 80
Norfolk	8 80	7 63	11 38	6 75	4 58	7 92	9 65	11 14	11 60
Haldimand	8 14	8 72	11 23	7 38	4 99	9 92	9 53	9 19	11 18
Welland	7 23	8 97	11 03	7 91	8 45	9 82	7 54	10 47	10 23
Group	9 80	9 76	12 73	7 60	6 24	8 90	9 04	9 64	11 19
Lambton	10 15	9 88	12 73	10 01	9 04	9 78	9 17	8 36	11 09
Huron	12 82	10 16	13 10	7 91	7 64	10 00	12 18	11 03	13 44
Bruce	12 33	7 84	11 64	10 54	10 18	10 50	14 71	10 08	13 87
Group	11 95	9 29	12 52	9 93	9 21	10 18	12 78	10 24	13 35
Grey	12 21	9 09	11 38	7 22	10 33	10 17	13 15	12 37	13 17
Simcoe	12 45	11 22	12 10	8 27	8 96	10 60	13 02	12 03	13 10
Group	12 31	9 96	11 69	8 01	9 15	10 52	13 09	12 23	13 14
Middlesex	12 33	10 68	13 58	9 06	8 55	9 89	9 83	8 08	11 51
Oxford	12 21	11 13	13 67	8 43	8 81	8 98	9 47	7 85	12 64
Brant	11 67	10 68	13 01	8 91	5 85	8 57	12 00	13 20	12 28
Perth	14 63	12 11	14 62	7 91	10 18	8 69	11 82	8 36	13 58
Wellington	13 40	12 17	13 15	8 96	8 25	10 49	12 72	10 97	13 76
Waterloo	12 21	11 41	13 43	9 22	5 50	10 14	12 54	10 25	13 59
Dufferin	10 85	10 28	12 11	7 64	5 34	10 59	12 66	11 81	12 81
Group	12 75	11 36	13 50	8 75	7 35	9 56	11 59	9 71	13 02
Lincoln	8 51	9 33	11 83	6 75	8 60	9 19	9 41	9 52	10 95
Wentworth	10 60	8 94	13 00	7 91	7 33	10 06	11 88	9 41	12 36
Halton	11 47	11 62	12 92	7 01	10 18	9 81	11 88	11 14	13 10
Peel	12 25	12 02	13 33	8 80	7 64	12 14	12 54	9 75	12 61
York	13 07	12 32	14 31	10 01	10 69	10 03	12 90	11 20	13 55
Ontario	12 41	12 57	13 62	7 59	8 55	10 58	10 25	10 25	12 50
Durham	10 56	10 77	12 63	7 43	8 50	9 04	10 13	9 36	11 84
Northumberland	10 36	9 24	10 55	6 64	6 46	7 87	12 30	11 36	10 49
Prince Edward	10 73	9 00	9 90	7 38	7 94	8 10	13 21	10 19	10 45
Group	11 57	11 14	12 91	7 20	7 65	8 71	11 77	10 37	12 15
Lennox and Addington	9 17	9 15	10 03	7 59	7 69	8 76	11 16	11 08	11 20
Frontenac	9 66	8 51	10 14	7 54	8 60	9 87	10 61	8 36	10 96
Leeds and Grenville	9 45	8 91	11 20	7 33	9 11	10 71	10 43	8 86	11 64
Dundas	10 40	8 78	12 56	11 28	10 18	13 62	14 95	6 85	13 44
Stormont	11 51	8 78	12 35	9 22	8 91	12 47	13 02	5 01	12 62
Glengarry	9 41	8 39	11 31	7 91	.....	10 03	10 97	6 68	11 17
Prescott	10 48	8 27	10 96	7 64	9 32	10 85	10 55	6 91	10 03
Russell	12 01	8 94	11 40	11 07	10 00	12 23	11 46	8 36	12 14
Carleton	11 71	9 30	12 42	9 54	10 84	10 76	13 75	12 64	13 18
Renfrew	11 06	11 96	11 25	9 01	12 17	11 33	13 39	15 21	12 66
Lanark	11 01	8 63	10 99	8 01	8 86	11 38	12 24	12 37	13 06
Group	10 52	9 18	11 41	8 47	9 82	10 70	12 10	11 33	12 03
Victoria	12 41	10 74	11 88	9 17	9 87	10 07	13 39	12 64	12 55
Peterborough	11 38	10 19	11 14	7 43	6 21	8 98	13 33	12 03	11 71
Haliburton	11 10	9 70	9 75	8 59	9 52	9 88	11 46	11 03	11 64
Hastings	10 64	10 25	10 45	8 54	8 09	9 19	13 02	11 59	10 83
Group	11 46	10 37	11 08	8 24	7 96	9 22	13 16	12 01	11 65
Muskoka	10 93	9 15	10 37	8 85	7 79	11 20	13 33	11 75	12 68
Parry Sound	11 64	8 30	10 82	12 70	11 61	12 74	12 00	10 14	12 95
Nipissing	12 08	.....	12 08	10 01	.....	10 01	12 54	.....	12 54
Algoma	11 30	10 89	12 85	9 22	9 67	9 79	14 05	14 09	15 62
Group	11 02	9 40	11 12	9 73	9 38	11 39	13 32	12 76	14 11
The Province	11 52	10 20	12 36	7 99	8 09	9 58	11 88	10 63	12 47

VALUES PER ACRE—CORN, BUCKWHEAT, BEANS AND HAY.

TABLE XV. Showing by County Municipalities and groups of Counties the market value of crop per acre of Corn, Buckwheat, Beans and Hay and Clover in Ontario in 1889 and 1890, with the yearly average for six years 1885-90.

Counties.	Corn.			Buckwheat.			Beans.			Hay and Clover.		
	1890.	1889.	'85-90.	1890.	1889.	'85-90.	1890.	1889.	'85-90.	1890.	1889.	'85-90.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	22 72	10 28	20 27	7 87	5 73	9 74	27 37	21 54	22 06	13 83	18 76	17 56
Kent	22 23	12 02	18 72	9 33	6 14	8 31	25 31	18 88	20 30	15 74	18 06	16 86
Elgin	18 61	13 31	19 61	9 20	9 48	8 27	24 67	26 86	22 49	15 18	19 76	16 61
Norfolk	15 19	13 34	17 00	9 03	7 47	8 14	20 82	31 68	18 31	13 59	16 57	13 63
Haldimand	14 58	12 56	18 78	9 80	7 74	7 47	19 66	17 48	18 88	13 44	13 97	13 40
Welland	14 55	11 81	17 93	9 20	6 83	8 18	15 42	16 85	15 28	15 26	15 57	13 87
Group	20 44	11 84	19 09	9 06	7 39	8 25	24 83	19 54	20 35	14 58	17 11	15 32
Lambton	18 73	9 56	17 37	6 67	6 64	7 68	15 93	19 64	17 84	14 15	16 57	15 79
Huron	17 87	12 95	20 20	8 60	7 11	7 78	32 13	25 34	26 94	15 11	15 97	15 50
Bruce	13 12	12 95	15 11	6 02	7 90	6 95	23 13	31 68	20 77	13 36	14 37	14 17
Group	17 81	10 57	17 63	6 80	7 14	7 44	19 88	23 20	20 24	14 22	15 52	15 07
Grey	15 25	9 84	13 93	8 04	5 53	7 13	25 76	25 34	20 52	15 11	14 37	13 38
Simcoe	18 61	14 89	16 00	7 87	7 50	7 08	23 13	25 34	21 25	12 96	14 97	13 66
Group	16 60	12 47	15 04	7 94	6 45	7 10	25 23	25 34	20 83	14 23	14 61	13 49
Middlesex	19 12	12 20	18 18	8 69	7 11	7 12	24 42	22 30	20 27	16 06	17 37	16 31
Oxford	17 93	11 06	17 22	7 31	7 23	7 03	21 20	25 34	24 33	17 33	17 07	16 60
Brant	22 05	15 54	18 99	8 34	7 39	7 90	23 90	20 65	17 20	18 21	17 66	14 54
Perth	16 78	9 07	17 02	10 75	8 06	7 55	32 13	30 91	24 47	17 49	15 97	16 60
Wellington	18 30	12 95	16 94	10 75	9 88	9 96	25 70	25 34	19 72	15 90	15 17	15 88
Waterloo	19 31	15 54	17 16	8 69	4 74	7 91	25 70	22 81	21 38	15 58	15 27	16 18
Dufferin	15 25	12 95	14 70	8 60	6 51	8 35	25 70	25 34	22 39	14 55	14 77	13 48
Group	19 00	12 54	17 89	8 62	7 36	7 64	23 87	24 24	20 91	16 45	16 23	15 93
Lincoln	13 15	11 73	17 42	9 89	7 27	8 71	25 70	24 07	22 27	15 90	15 27	14 59
Wentworth	19 52	15 90	19 39	8 56	6 08	8 79	21 20	28 51	22 69	18 05	16 67	14 75
Halton	21 87	15 54	17 31	8 60	6 24	5 92	22 49	25 34	19 44	13 91	15 37	13 26
Peel	18 30	20 98	17 50	10 75	6 95	7 77	22 49	31 68	22 80	14 71	15 27	14 14
York	18 30	15 23	18 42	6 02	7 90	7 53	32 13	24 07	24 57	14 07	15 77	14 03
Ontario	16 26	12 30	15 95	9 16	11 85	9 96	22 23	22 17	22 59	14 15	16 27	14 54
Durham	15 77	16 32	13 77	9 33	8 45	9 13	23 52	17 30	18 85	15 18	16 77	14 59
Northumberland	15 77	13 73	14 04	9 03	8 33	8 59	20 82	21 92	22 60	12 56	15 27	13 31
Prince Edward	18 64	13 93	14 71	10 58	6 91	9 90	23 39	28 51	19 35	12 56	18 26	13 91
Group	17 13	14 10	16 36	9 55	7 74	9 16	22 72	23 75	21 20	14 49	16 01	14 13
Lennox and Addington	16 93	18 26	15 96	11 05	13 19	9 81	27 37	36 49	20 64	11 93	14 37	12 19
Frontenac	16 78	13 23	14 87	11 35	11 02	9 92	23 90	26 35	24 04	13 36	15 57	11 75
Leeds and Grenville	20 25	18 41	18 60	10 62	9 52	9 26	26 34	21 79	22 99	12 00	16 57	13 69
Dundas	17 96	11 91	17 53	13 20	10 15	11 65	32 13	34 46	26 01	11 93	17 17	16 97
Stormont	22 88	15 70	18 07	12 17	10 23	11 36	27 63	28 51	25 24	10 97	18 56	16 88
Glengarry	22 51	16 84	17 88	9 63	8 89	9 18	25 70	28 51	24 98	10 57	19 16	18 01
Prescott	22 94	15 82	17 28	8 26	10 70	8 62	22 49	26 10	22 09	11 69	15 37	15 34
Russell	17 78	11 66	13 47	11 01	12 13	9 63	23 13	24 07	20 57	10 73	13 97	13 84
Carleton	15 40	13 88	14 33	9 63	12 56	8 84	29 56	28 51	22 73	10 26	13 07	14 56
Renfrew	13 73	11 74	13 37	9 93	8 30	9 19	25 44	36 87	26 12	10 57	11 68	10 92
Lanark	19 06	13 60	14 28	9 50	10 03	8 54	24 80	37 00	25 32	11 29	14 87	14 34
Group	19 00	15 85	16 76	10 60	10 64	9 45	26 41	29 85	23 76	11 52	15 39	13 97
Victoria	18 39	17 48	18 55	9 76	11 69	8 21	29 94	25 34	22 93	11 37	13 27	11 97
Peterborough	16 01	11 66	13 40	11 22	10 31	9 09	25 70	19 01	16 58	12 96	13 47	11 47
Haliburton	12 20	18 13	13 69	11 09	8 30	7 72	25 70	31 68	20 07	9 30	9 78	11 27
Hastings	15 49	12 87	14 33	9 59	8 57	9 20	29 43	17 10	21 81	13 59	13 37	12 81
Group	15 70	13 36	14 65	10 02	9 06	9 00	27 99	18 81	20 54	12 62	13 13	12 18
Muskoka	11 16	12 95	11 31	9 85	9 88	10 27	28 91	25 34	23 24	14 71	10 98	13 39
Parry Sound	12 20	9 84	12 38	12 38	11 85	9 92	25 70	21 50	22 86	11 93	12 38	11 58
Nipissing	11 68		11 33	11 05	.....	11 21	26 60	.....	26 60	13 91	.....	13 91
Algoma	12 20	10 36	12 57	8 60	7 90	8 81	25 70	25 34	23 44	13 91	14 27	13 50
Group	11 53	11 72	11 73	10 27	9 49	10 00	26 86	24 97	23 25	13 71	12 19	13 01
The Province	19 09	12 80	17 97	9 80	8 91	9 02	24 80	21 58	20 86	13 90	15 59	14 44

VALUES PER ACRE—POTATOES, CARROTS AND TURNIPS.

TABLE XVI. Showing by County Municipalities and groups of Counties the market value per acre of Potatoes, Carrots and Turnips in Ontario in the years 1889 and 1890, with the yearly average for six years 1885-90

Counties.	Potatoes.			Carrots.			Turnips.		
	1890.	1889.	1885-90.	1890.	1889.	1885-90.	1890.	1889.	1885-90.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	35 17	24 12	36 79	106 47	28 67	70 94	96 00	25 76	66 44
Kent	42 75	36 40	42 89	101 75	52 69	87 97	91 65	69 08	84 70
Elgin	37 30	31 08	39 12	112 46	82 72	96 00	89 60	65 21	82 36
Norfolk	31 67	24 07	31 02	78 44	68 25	77 23	83 97	63 38	85 39
Haldimand	31 19	26 48	42 07	100 49	66 61	80 34	89 60	59 28	66 19
Welland	28 13	29 21	34 07	68 36	73 16	85 98	62 21	63 61	77 47
Group	35 00	28 64	37 38	95 93	63 17	83 99	85 28	61 34	81 58
Lambton	35 97	25 57	38 76	104 58	65 25	88 72	79 36	45 60	71 89
Huron	52 27	46 27	50 87	120 02	85 45	108 94	115 71	72 50	96 98
Bruce	50 59	46 00	51 04	106 79	63 88	91 03	109 57	68 86	97 60
Group	46 08	41 77	48 17	111 55	74 57	99 02	112 06	70 06	96 70
Grey	70 79	46 96	59 03	114 03	83 27	102 39	105 73	72 96	94 04
Simcoe	58 87	50 96	55 40	115 61	101 56	100 25	117 76	94 39	96 73
Group	64 59	49 01	57 20	114 80	93 34	101 26	108 93	79 33	94 79
Middlesex	42 09	26 85	40 05	110 88	72 07	90 94	87 81	54 72	84 03
Oxford	40 00	33 58	40 77	112 77	91 73	104 30	107 78	63 38	100 23
Brant	48 29	34 13	43 81	142 38	76 17	119 25	113 66	58 37	102 84
Perth	57 24	26 66	47 27	124 11	60 33	109 37	109 31	57 91	93 62
Wellington	58 96	51 69	52 34	115 29	63 61	88 02	104 96	77 29	99 58
Waterloo	53 74	37 63	49 54	122 54	88 73	108 53	103 94	58 60	92 91
Dufferin	61 05	53 37	58 98	98 60	84 63	94 10	101 89	86 18	88 43
Group	51 83	38 35	47 53	117 94	77 00	101 39	105 56	67 88	96 72
Lincoln	35 53	28 44	39 93	102 38	64 43	90 55	92 16	75 01	84 17
Wentworth	41 15	35 72	46 62	123 48	54 60	100 32	128 77	71 36	111 78
Halton	42 44	40 63	45 14	115 92	109 20	114 02	131 33	59 28	103 41
Peel	38 01	36 04	40 73	108 05	79 72	88 24	114 18	74 78	83 89
York	46 60	48 37	44 77	127 26	90 09	116 50	108 54	71 82	94 13
Ontario	45 10	51 60	53 35	137 03	104 01	119 48	125 44	91 20	100 37
Durham	43 46	58 29	50 71	102 06	114 11	103 26	106 50	88 92	97 99
Northumberland	44 96	42 27	42 44	113 09	98 01	96 02	115 20	98 50	96 33
Prince Edward	34 64	29 39	39 03	90 09	40 95	66 18	97 54	22 80	63 05
Group	42 78	43 63	45 30	118 47	91 23	105 65	118 79	84 21	98 96
Lennox and Addington	38 23	51 55	48 19	114 35	84 63	81 73	68 35	51 30	62 43
Frontenac	37 21	29 30	39 05	60 17	61 70	70 12	67 58	51 98	67 35
Leeds and Grenville	45 14	30 85	49 54	97 65	87 36	88 37	91 90	77 75	83 61
Dundas	73 10	32 44	58 30	126 00	42 04	84 69	72 45	57 00	68 26
Stormont	48 73	21 61	48 86	78 75	81 90	62 05	97 28	57 00	73 29
Glengarry	49 04	20 02	47 23	78 75	56 78	63 73	134 40	51 30	99 69
Prescott	72 25	43 68	59 38	94 82	69 62	80 69	83 97	66 80	89 54
Russell	54 49	41 72	44 46	96 39	85 45	91 04	105 73	109 44	104 38
Carleton	56 79	63 52	55 08	97 65	84 08	85 29	97 28	85 04	82 47
Renfrew	57 77	86 45	64 39	122 22	83 27	78 48	85 25	88 46	74 06
Lanark	55 95	63 47	56 88	131 36	101 01	98 02	96 51	91 20	82 15
Group	51 75	46 42	52 18	99 76	78 61	83 38	93 98	81 54	80 83
Victoria	61 53	65 43	55 41	102 69	110 84	107 25	89 60	83 90	89 34
Peterborough	48 86	67 75	50 16	129 78	93 09	92 49	102 40	95 99	80 91
Haliburton	54 05	60 88	54 05	107 10	54 87	92 00	78 59	72 96	70 78
Hastings	43 19	55 46	51 60	85 37	81 63	87 57	81 41	67 49	69 66
Group	50 27	61 28	52 43	110 24	96 73	96 87	91 43	82 73	83 47
Muskoka	56 17	74 76	59 85	78 75	106 74	72 94	96 26	94 16	75 76
Parry Sound	61 01	71 84	68 59	55 13	63 34	75 00	72 45	84 13	76 88
Nipissing	62 02	.....	62 02	63 00	.....	63 00	76 80	.....	76 80
Algoma	77 53	84 18	77 32	63 00	68 25	70 63	102 40	51 30	73 46
Group	64 67	76 27	66 62	68 90	89 41	72 57	88 58	81 27	75 51
The Province	49 21	44 80	48 93	110 74	83 20	97 36	108 44	75 97	94 94

VALUES PER ACRE—ALL FIELD CROPS.

TABLE XVII. Showing by County Municipalities and groups of Counties in Ontario the average market value in 1889 and 1890 of all field crops and by groups as in Table XI; also the yearly average of the first group for nine years 1882-90, of the second group for six years 1885-90, and a yearly average of all crops derived from the aggregate in Table XII and corresponding acreage.

Counties.	Wheat, barley, oats, rye and pease.			Corn, buckwheat, beans, hay, potatoes, carrots and turnips.			All field crops.		
	1890.	1889.	1882-90.	1890.	1889.	1885-90.	1890.	1889.	Yearly average.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	12 24	11 76	15 12	18 98	15 62	19 60	15 62	13 69	17 41
Kent	14 54	12 12	15 54	20 62	17 30	18 94	17 51	14 43	17 12
Elgin	13 83	11 65	14 88	17 40	19 32	18 48	15 34	14 91	16 39
Norfolk	12 10	9 97	12 96	16 02	17 07	16 33	13 67	12 80	14 35
Haldimand	10 41	10 42	12 61	14 20	14 45	14 51	11 77	11 95	13 33
Welland	10 78	10 74	12 42	15 72	15 67	15 15	13 39	13 50	13 87
Group	12 55	11 17	14 08	17 69	16 69	17 94	14 86	13 63	15 62
Lambton	11 85	11 51	14 09	16 14	16 48	17 34	13 44	13 41	15 34
Huron	14 32	10 95	14 56	22 13	20 63	22 17	17 09	14 30	17 13
Bruce	14 55	9 42	13 90	19 90	18 79	20 73	16 62	12 87	16 38
Group	13 81	10 53	14 23	19 91	18 98	20 51	16 07	13 59	16 47
Grey	12 80	10 31	12 96	24 16	19 73	21 29	17 34	13 88	16 13
Simcoe	13 32	12 70	14 31	20 85	21 08	20 55	15 55	15 10	16 14
Group	13 07	11 53	13 63	22 84	20 27	20 99	16 49	14 46	16 13
Middlesex	14 78	11 05	14 87	19 42	18 05	19 01	16 50	13 62	16 36
Oxford	14 55	11 82	15 05	24 61	20 74	23 66	18 45	15 12	18 26
Brant	14 32	12 44	14 57	27 76	21 80	23 32	19 14	15 69	17 63
Perth	15 17	11 55	15 30	24 94	18 59	22 80	18 56	13 89	17 82
Wellington	13 85	12 34	14 28	28 94	24 70	28 36	19 24	16 66	19 27
Waterloo	14 92	12 86	15 61	26 40	21 27	26 02	18 44	15 40	18 89
Dufferin	12 42	10 66	13 22	24 98	21 63	21 78	16 15	14 23	15 96
Group	14 37	11 80	14 76	24 91	20 85	23 56	18 07	14 93	17 82
Lincoln	11 47	12.03	13 56	16 83	15 63	16 29	13 97	13 91	14 92
Wentworth	12 42	10 71	14 29	26 19	20 75	22 12	17 73	14 61	17 35
Halton	12 51	14 31	14 68	21 50	18 80	19 32	15 44	15 87	16 32
Peel	13 00	12 95	15 05	20 38	19 30	18 72	14 76	14 56	16 02
York	13 13	13 59	15 55	23 02	21 95	20 98	15 95	15 88	17 11
Ontario	11 00	12 81	14 54	33 90	31 54	31 71	18 36	18 15	19 68
Durham	9 97	11 66	13 63	24 77	27 19	25 28	14 52	15 83	16 84
Northumberland	10 68	9 94	11 80	18 83	20 73	18 86	13 71	13 49	14 20
Prince Edward	11 21	10 17	10 80	14 41	16 72	14 89	12 46	12 32	12 25
Group	11 75	12 14	13 96	22 88	22 02	21 47	15 44	15 24	16 40
Lennox and Addington	9 53	10 42	11 43	13 31	16 34	14 21	11 44	12 98	12 61
Frontenac	9 71	8 77	11 43	15 06	16 63	13 80	12 55	12 66	12 63
Leeds and Grenville	9 44	9 39	12 02	14 62	17 42	15 88	12 43	13 83	14 18
Dundas	10 72	9 28	13 69	15 54	17 74	19 27	13 29	13 45	16 42
Stormont	11 68	9 02	13 08	13 62	18 58	18 44	12 80	14 28	15 93
Glengarry	9 78	8 95	11 87	13 19	18 99	19 59	11 52	14 12	15 55
Prescott	10 87	8 57	11 49	14 79	17 21	18 06	12 78	12 68	14 56
Russell	11 99	9 64	12 11	16 47	18 20	17 68	13 95	13 33	14 54
Carleton	11 48	11 11	13 18	17 91	19 82	19 61	14 17	14 48	15 79
Renfrew	11 41	13 90	12 52	14 19	16 40	14 55	12 54	14 95	13 39
Lanark	10 49	9 89	12 10	14 43	17 64	16 65	12 36	13 55	14 35
Group	10 57	10 27	12 25	14 82	17 62	16 65	12 68	13 75	14 35
Victoria	12 08	11 70	13 17	20 30	24 20	21 58	14 52	14 98	15 46
Peterborough	11 42	10 70	12 32	19 47	20 78	16 63	14 06	13 62	13 67
Haliburton	10 90	10 53	10 54	13 98	14 55	15 36	12 50	12 69	13 29
Hastings	11 19	11 16	11 80	16 02	16 95	15 98	13 29	13 41	13 42
Group	11 56	11 20	12 38	17 79	19 44	17 49	13 84	13 93	14 11
Muskoka	11 52	9 80	11 22	19 65	19 06	18 77	16 46	15 47	16 08
Parry Sound	10 97	8 95	11 95	18 22	20 12	18 84	15 15	15 43	15 83
Nipissing	12 17	....	12 17	19 12	.....	19 12	16 67	.....	16 67
Algoma	13 03	13 45	15 63	20 69	19 96	20 02	16 66	16 21	17 60
Group	11 99	11 17	13 17	19 51	19 55	19 11	16 21	15 71	16 58
The Province	12 54	11 35	13 73	19 87	19 35	19 69	15 42	14 37	16 01

FARM WAGES.

TABLE XVIII. Showing by County Municipalities and groups of Counties the average wages of Farm Laborers and Domestic Servants in Ontario in 1889 and 1890.

Counties.	Farm laborers.								Domestics per month with board.	
	Per year—				Per month in working season—					
	With board.		Without board.		With board.		Without board.			
	1890.	1889.	1890.	1889.	1890.	1889.	1890.	1889.	1890.	1889.
	$	$	$	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	159	162	253	269	16 60	17 71	26 53	26 24	6 71	7 81
Kent	161	167	256	257	17 49	17 83	27 39	25 97	6 81	7 08
Elgin	158	173	244	257	16 89	17 55	25 47	25 48	6 51	7 15
Norfolk	151	152	235	236	15 39	16 18	23 97	23 92	5 63	6 00
Haldimand	145	153	241	240	16 83	16 86	25 67	25 62	6 32	6 71
Welland	146	146	250	234	16 37	16 76	26 93	25 17	6 47	6 80
Group	154	160	247	249	16 65	17 19	25 94	25 45	6 40	6 93
Lambton	160	162	263	264	17 18	18 47	28 21	26 90	6 66	6 82
Huron	154	163	252	248	16 48	17 90	26 15	26 58	6 21	6 32
Bruce	153	164	256	245	16 56	17 86	27 08	26 00	5 83	6 24
Group	155	163	256	250	16 72	17 98	27 04	26 39	6 18	6 38
Grey	158	157	253	241	16 58	16 97	26 32	25 59	5 75	6 04
Simcoe	152	163	263	260	16 92	18 00	26 10	27 41	5 81	6 71
Group	156	160	257	253	16 73	17 44	26 23	26 66	5 77	6 33
Middlesex	154	161	261	250	16 74	17 09	26 90	25 24	6 47	6 86
Oxford	161	161	248	249	16 42	17 45	25 06	25 26	6 39	6 75
Brant	156	160	250	241	16 51	16 45	25 17	23 65	6 50	6 99
Perth	154	158	240	240	16 77	17 27	27 22	25 72	6 33	6 53
Wellington	160	163	252	246	16 38	17 16	26 69	26 08	6 37	6 61
Waterloo	153	158	251	250	15 81	17 33	25 67	26 40	6 13	7 18
Dufferin	158	164	255	254	17 39	17 88	27 82	25 00	6 17	6 66
Group	157	161	251	245	16 54	17 20	26 24	25 31	6 36	6 76
Lincoln	149	157	245	257	17 14	17 92	26 35	26 71	6 03	6 52
Wentworth	153	162	251	250	16 72	18 27	26 59	26 17	6 62	7 05
Halton	158	170	277	259	17 08	18 07	27 81	26 65	7 03	7 47
Peel	162	170	256	259	17 55	18 23	27 10	25 91	6 97	7 44
York	169	170	264	260	17 49	17 72	27 26	26 72	7 04	7 33
Ontario	166	162	251	243	17 15	17 01	27 17	25 32	6 27	6 79
Durham	154	160	275	241	16 01	16 55	26 10	24 30	6 41	6 73
Northumberland	150	156	245	231	16 14	16 64	24 47	23 98	5 69	6 41
Prince Edward	151	151	218	221	15 61	16 72	23 56	22 47	5 48	5 67
Group	159	163	254	248	16 87	17 44	26 34	25 54	6 42	6 86
Lennox and Addington	155	152	227	228	16 48	16 84	24 03	23 44	5 44	5 56
Frontenac	151	155	254	235	17 06	18 76	26 58	27 34	5 95	7 43
Leeds and Grenville	153	159	243	236	16 50	18 72	25 29	26 43	6 57	6 83
Dundas	148	150	291	231	17 47	17 19	29 69	26 11	6 72	7 00
Stormont	153	166	238	271	17 05	17 75	27 15	26 88	6 13	6 23
Glengarry	151	146	249	244	16 95	18 07	27 18	26 91	6 33	6 46
Prescott	179	162	279	236	18 05	18 18	27 68	26 78	4 80	6 17
Russell	159	166	253	290	17 35	18 18	26 76	28 50	5 08	5 85
Carleton	162	169	261	254	17 17	17 67	27 83	26 33	7 08	6 98
Renfrew	160	164	255	251	17 50	17 60	28 87	26 21	5 31	5 60
Lanark	161	162	254	256	17 25	18 12	27 19	27 00	6 59	6 59
Group	159	159	253	241	17 17	17 92	26 86	26 24	6 00	6 37
Victoria	168	167	263	267	17 45	18 04	25 77	27 00	6 19	6 41
Peterborough	157	171	272	265	16 46	17 57	25 75	26 52	6 40	7 15
Haliburton	153	165	228	256	17 69	18 07	26 41	26 25	4 87	4 92
Hastings	158	159	249	260	16 26	17 39	25 19	26 46	5 69	6 11
Group	160	165	258	263	16 77	17 67	25 68	26 55	5 93	6 32
Muskoka	159	158	252	257	19 53	19 23	28 33	28 82	6 46	6 55
Parry Sound	173	179	298	295	18 85	18 58	29 04	28 86	5 85	5 83
Nipissing	188	.....	297	..	20 61	.....	32 28	.....	6 22	.....
Algoma	181	182	257	278	20 19	20 72	29 68	28 82	7 24	6 81
Group	174	175	280	278	19 74	19 38	29 59	28 83	6 40	6 32
The Province	157	162	253	249	16 88	17 59	26 56	26 01	6 23	6 61

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO

1890

PART IV. LOAN AND INVESTMENT COMPANIES.

PART V. CHATTEL MORTGAGES.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.

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1891.

NINTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

PARTS IV AND V.

To the Honorable John Dryden, Minister of Agriculture :

Sir,—I have the honor to present herewith Parts iv and v of the ninth annual report of the Bureau of Industries, being a statement of the affairs of Loan and Investment Companies and a return by County Court Clerks of Chattel Mortgages on record in Ontario for the year ending Dec. 31, 1890.

I have the honor to be, Sir,

Your obedient servant,

C. C. JAMES,

Secretary.

Toronto, July 30, 1891.

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PART IV.

LOAN AND INVESTMENT COMPANIES.

STATEMENT OF AFFAIRS.

Returns have been received from sixty-seven loan, building and investment companies for the year 1890. The ending of the financial year varies with the different companies; it will be seen that fifty-four close their year on December 31. The head offices of twenty-seven companies are located in Toronto, of nine in London, of five in St. Thomas, of three each in Hamilton and Ottawa, of two each in Kingston, Sarnia and Stratford, while fourteen other places have one each. One new company was returned, viz.: The Stratford Building and Savings; while of five others reported for 1889, but not for 1890, three, the Arcanum Loan, the Royal Oak Building and the Workingmen's Savings of Toronto, have been absorbed by the Canadian Homestead Loan and Savings Association of the same city. The Civil Service Building Society is going out of business.

The following table gives the amount of capital subscribed, and liabilities and assets of the companies whose head offices are located in the various towns and cities, for the year 1890:

Location of head office of company.	Capital subscribed.	Liabilities to stock-holders.	Liabilities to the public.	Total liabilities or assets.	Secured loan assets.	Property assets.
	$	$	$	$	$	$
Hamilton	2,523,860	2,289,156	3,308,784	5,597,940	5,210,583	387,357
Kingston	450,000	510,811	425,155	935,966	762,992	172,974
London	10,680,500	7,978,349	9,402,757	17,381,106	16,013,984	1,367,122
Ottawa	518,400	463,959	45,684	509,643	405,423	104,220
St. Thomas	1,822,750	1,148,368	718,089	1,866,457	1,792,275	74,182
Sarnia	898,100	1,077,969	971,411	2,049,380	2,031,835	17,545
Stratford	534,200	380,242	478,906	859,148	858,755	393
Toronto	47,634,050	24,424,231	44,377,178	68,801,409	61,229,481	7,571,928
Other places...	5,610,850	4,400,467	5,816,235	10,216,702	9,805,704	410,998
Totals	70,672,710	42,673,552	65,544,199	108,217,751	98,111,032	10,106,719

The bulk of loan companies' business is transacted by those located in Toronto, the subscribed capital of its companies being over 67 per cent. of the total; while London comes next with 15 per cent. In the Toronto companies the property assets are as high as 75 per cent. of the total.

In Table 1 will be found a detailed statement showing the various items in the assets and liabilities of the sixty-seven companies reporting, as far as is consistent with a uniform tabulation. It also shows a miscellaneous summary, chiefly of business transacted during the year 1890.

The 56 limited companies have an aggregate capital of $102,782,249, of which $65,895,410 or 64 per cent. has been subscribed. The amount subscribed to 11 "unlimited" companies is $4,777,300.

The amount of capital fully paid in is $12,498,330, to which must be added stock upon which $18,688,567 has been paid, making in all $31,186,897, or an average of over 44 per cent. of stock subscribed. In addition there is accumulating stock, $99,836, reserve funds of $9,288,795, dividends unpaid $952,907, and contingent fund $1,145,117; or enough to swell up the average to the credit of stockholders to 60 per cent. on stock subscribed.

The public have on deposit $17,103,403 (including a portion of interest due and accrued). The companies have now debentures outstanding amounting to $46,090,494, of which $7,654,504, or but one-sixth, is payable in Canada.

The amount secured by mortgage on real estate of general borrowers is $95,007,933, of which $3,006,109 is held under power of sale. Loans have been made to directors or other officers and shareholders of companies on real estate or stock to the extent of $939,631. Loans on other securities bring the total loan assets up to $98,111,032.

The total property assets amount to $10,106,719, of which 27 per cent is in cash on hand or in bank. The total assets or liabilities are balanced at $108,217,751.

Coming to the miscellaneous summary we find that dividends of $2,250,027 were declared during the year. This is equivalent to over 7 per cent. on the amount of stock paid in to the end of the year. The amount loaned was $18,542,000, and $20,469,955 was received from borrowers. The latter amount, however, includes interest on the larger portion of $95,245,657 in secured loans. The debentures issued exceeded the debentures repaid by over two million dollars. This excess would provide for the payment of coupons on debentures which amounted in the year to $2,035,921. The amount received from depositors was $23,347,971, while those having deposits withdrew $23,416,074 in principal and $710,285 in interest. Compulsory proceedings were taken in 805 cases during the year, the amount involved being $1,899,209.

The following comparative statement shows the business transacted during the several years by the companies reporting throughout. Returns have been received from sixty-six companies for both 1889 and 1890, while only fifty-four have sent in reports regularly for the four years 1887-90 :

Schedule.	66 companies reporting for the years—		54 companies reporting for the years—			
	1890.	1889.	1890.	1889.	1888.	1887.
	$	$	$	$	$	$
Dividends declared in year	2,249,936	2,200,724	2,138,647	2,097,321	2,032,336	2,017,476
Loaned during year	18,534,300	21,792,325	17,263,028	20,391,348	17,048,536	17,160,053
Received from borrowers	20,469,531	21,328,808	19,114,906	19,941,262	18,820,162	18,987,927
Received from depositors	23,347,971	24,721,232	22,856,709	24,419,674	22,918,698	25,283,071
Repaid depositors	23,416,074	24,580,790	23,028,209	24,357,831	24,188,350	25,283,441
Debentures issued	10,564,009	11,337,938	9,908,610	10,505,870	7,958,544	6,263,884
Debentures repaid	8,523,124	7,578,661	7,974,017	6,868,817	5,123,871	4,346,294
Debentures to mature within one year	7,856,937	10,230,949	6,966,372	9,080,086	9,033,705	5,777,979
Interest paid and accrued—						
On debentures	2,035,921	2,015,084	1,764,534	1,741,483	1,592,484	1,552,621
On deposits	710,285	680,570	702,140	676,871	708,708	685,138
Cost of management	846,832	842,270	767,158	765,390	748,327	684,966
Mortgages on which compulsory proceedings have been taken—						
Number	805	767	738	716	735	688
Amount	1,899,209	1,850,647	1,779,796	1,746,794	1,670,733	1,419,012
Invested and secured by mortgage	95,237,957	91,538,581	87,377,811	84,151,631	78,735,837	75,431,737
Value of property under mortgage held for sale	3,199,119	3,026,619	2,799,362	2,611,812	2,719,277	2,475,568
Amount chargeable against such property	3,006,109	2,860,394	2,606,651	2,446,634	2,493,399	2,174,245

The dividends declared in the year by 66 companies exceeded those for 1889 by $49,212, while the dividends of 54 companies were greater than in 1887 by $121,171. The amount loaned by the 54 companies in 1890 was less than in 1889 by $3,128,320, though slightly in excess of 1887 or 1888. The amount received from borrowers (principal and interest) was less than in 1889 and the average for the four years. The deposits

received and repaid were each lower than any other year named. The payments on interest account show steady increases, but the portion for deposits was less than in 1888 by $6,568. The cost of management includes commission, agency, and all other expenses at head office or elsewhere, not directly chargeable to or on account of borrowers. This item did not receive material additions during 1890, but was higher by $82,192 than in 1887. The amount invested and secured by mortgage has been steadily advancing, there being an increase in 1890 of $3,699,376 for 66 companies, and of nearly twelve million dollars in the interval since 1887 for the 54 companies.

The following table shows the growth of assets and liabilities of the same companies reporting for the several years :

Statement of assets and liabilities.	66 companies reporting for the years—		54 companies reporting for the years—			
	1890.	1889.	1890.	1889.	1888.	1887.
	$	$	$	$	$	$
Capital subscribed	70,588,510	69,341,932	61,280,660	60,331,132	57,335,159	56,048,310
Liabilities.						
Liabilities to stockholders :						
Stock paid in and accumulating stock	31,282,897	30,750,617	28,871,418	28,468,476	27,511,217	26,932,431
Reserve fund	9,288,795	8,709,391	8,927,162	8,369,624	7,666,384	7,241,765
Dividends declared, unpaid	952,907	984,980	893,632	929,638	899,906	885,736
Contingent fund and unappropriated profits	1,144,995	1,105,155	832,667	801,055	773,730	774,500
Total	42,669,594	41,550,143	39,524,879	38,568,793	36,851,237	35,834,432
Liabilities to the public :						
Deposits	17,103,403	16,942,965	16,893,287	16,823,175	16,519,063	17,533,413
Debentures payable in Canada	7,654,504	7,622,256	7,047,214	7,089,355	5,949,676	5,500,622
Debentures payable elsewhere	38,435,990	36,712,825	33,291,108	31,601,564	29,078,893	26,722,070
Interest on deposits and debentures due and accrued	694,446	683,322	648,231	638,689	570,858	587,484
Owing to banks	268,439	214,046	217,175	171,320	114,852	155,326
Other liabilities	1,383,282	791,396	1,355,309	749,789	714,753	678,189
Total	65,540,064	62,966,810	59,452,324	57,073,892	52,948,095	51,177,104
Assets.						
Secured loan assets :						
On real estate of—						
General borrowers	95,000,233	91,500,675	87,164,087	84,046,586	77,786,343	74,907,069
Directors and officers	182,724	207,965	158,724	188,565	164,977	252,957
Shareholders and officers' stock	756,907	751,678	755,307	748,632	829,150	1,028,519
Otherwise secured	2,163,468	2,130,651	2,141,204	2,125,691	2,413,756	2,799,039
Total	98,103,332	94,590,969	90,219,322	87,109,474	81,194,226	78,987,584
Property assets :						
Municipal securities	892,101	936,271	820,251	857,174	1,078,462	1,061,151
Office premises, furniture etc.	1,052,720	1,028,646	1,049,333	1,025,157	896,501	779,343
Cash on hand and in bank	2,745,147	2,599,131	2,585,755	2,399,847	2,102,288	2,189,670
Real estate foreclosed or otherwise acquired	2,004,453	2,098,297	1,007,845	1,125,262	1,172,344	1,122.183
Other property	3,411,905	3,263,639	3,294,697	3,125,771	3,355,511	2,871,605
Total	10,106,326	9,925,984	8,757,881	8,533,211	8,605,106	8,023,952
Total assets or liabilities	108,209,658	104,516,953	98,977,203	95,642,685	89,799,332	87,011,536

The capital subscribed to 66 companies received an increase during the year of $1,246,578, while the subscriptions to the 54 companies are now higher by $5,232,350

than in 1887. In these companies the capital paid in (including accumulating stock) was supplemented by $1,938,987, and additions aggregating $1,685,397 were made to the reserve funds in the interval since 1887. The amount due depositors differs little from the normal. The debenture debt of the 54 companies has advanced from $32,222,692 in 1887 to $40,338,322 in 1890, being an increase of 25 per cent. Of this increase $1,546,392 is held by Canadian capitalists, while most of the balance $6,569,038 is held in Great Britain. The loan assets have increased in the period by $11,231,738, and the property assets by $733,929. Nearly 37 per cent. of the latter amount was in office premises.

Table II presents a comparative statement of the amounts loaned in each of the four years 1887-90, with a yearly average for that period by the 54 companies reported. In eleven companies the loans of 1890 exceeded those of 1889, while fourteen surpassed their yearly averages for the period named. The Canada Permanent Loan, of Toronto, stands first in the amount loaned, while the Freehold Loan, Home Savings and Western Canada Loan, of the same place, each average over a million dollars yearly in loans. In nine other companies the average yearly loans exceeded half a million dollars. The twenty Toronto companies named in the table effected loans in 1890 to the extent of $10,945,782, or an average of $11,145,959 for the four years 1887-90. The nine London companies averaged $2,767,453, and the three Hamilton companies $1,043,653.

LOAN AND INVESTMENT COMPANIES.

List of Companies reporting Statement of Affairs as required by Chapter 169, Section 83, *et seq.*, R. S. O. 1887, or by provisions of Special Charters.

Name of Company.	When Organised.	President.	Manager.	Head Office.	For year ending—
Barrie Loan and Savings Company	April 14, 1881.	N. Dyment	Robert Laidlaw	Barrie	Dec. 31, 1890.
Hastings Loan and Investment Society	January 1876.	Hon. Mackenzie Bowell	J. P. C. Phillips	Belleville	Dec. 31, 1890.
Royal Loan and Savings Company	June 1, 1876.	T. S. Shenston	R. S. Schell	Brantford	Dec. 31, 1890.
Chatham Loan and Savings Company	Sept. 28, 1881.	Archibald Bell	S. F. Gardner	Chatham	Dec. 31, 1890.
Huron and Bruce Loan and Investment Company	June, 1885.	Joseph Williams	Horace Horton	Goderich	Dec. 31, 1890.
Guelph and Ontario Investment and Savings Society	..... 1876.	David Stirton	William Ross	Guelph	Dec. 31, 1890.
Hamilton Provident and Loan Society	Sept., 1871.	George H. Gillespie	H. D. Cameron	Hamilton	Dec. 31, 1890.
Hamilton Homestead Loan and Savings Society	Jan. 1, 1883.	James E. O'Reilly	I. A Studdart	Hamilton	Dec. 31, 1890.
Landed Banking and Loan Company	February, 1877.	Matthew Leggat	C. W. Cartwright	Hamilton	Dec. 31, 1890.
Frontenac Loan and Investment Society	Dec., 1863.	.....	Thomas Briggs	Kingston	Dec. 31, 1890.
Ontario Building and Savings Society	June 26, 1874.	C. V. Price	James McArthur	Kingston	Dec. 31, 1890.
Agricultural Savings and Loan Company	May, 1872.	William Glass	W. A. Lipsey	London	Dec. 31, 1890.
Canadian Savings and Loan Company	October, 1875.	James Durand	H. W. Blinn	London	May 31, 1890.
Dominion Savings and Investment Society	April, 1872.	Robert Reid	H. E. Nelles	London	Dec. 31, 1890.
Empire Loan Company of Canada	April 15, 1881.	F. R. Eccles	George Pritchard	London	Dec. 31, 1890.
Huron and Erie Loan and Savings Company	.....1864.	John W. Little	George A. Somerville	London	Dec. 31, 1890
London Loan Company of Canada	.....1877.	Thomas Kent	Malcolm John Kent	London	Dec. 31, 1890.
Ontario Investment Association	April, 1880.	Wm. J. McIntosh	A. T. McMahen	London	Dec. 31, 1890.
Ontario Loan and Debenture Company	October, 1870.	Joseph Jeffery	William F. Bullen	London	Dec. 31, 1890
Royal Standard Loan Company	August, 1877.	G. Taylor	D. McMillan	London	Dec. 31, 1890.
Orangeville Building and Loan Association	.....1873.	James S. Fead	Francis Irwin	Orangeville	Dec. 31, 1890.
Ontario Loan and Savings Company	.....1873.	W. F. Cowan	T. H. McMi lan	Oshawa	Dec. 31, 1890.
Dominion Investment Loan and Savings Company	Dec. 1, 1886.	James Gillies	James Gillies	Ottawa	Dec. 31, 1890.
Metropolitan Loan and Savings Company	August, 1870.	H. V. Noel	C. R. Cunningham	Ottawa	Dec. 31, 1890.
Ottawa Building and Loan Society	June 6, 1884.	A. Smirle	C. A. Douglas	Ottawa	May 31, 1890.
Owen Sound Grey and Bruce Loan and Savings Company	April 15, 1889.	William Roy	W. P. Telford	Owen Sound	Dec. 31, 1890.
Central Canada Loan and Savings Company	April 1, 1884.	George A. Cox	Fred G. Cox	Peterborough	Dec. 31, 1890.
Crown Savings and Loan Company	Jan. 30, 1882.	John H. Fairbank	John Fraser	Petrolea	Dec. 31, 1890.
Midland Loan and Savings Company	..... 1873.	John Mulligan	George M. Furby	Port Hope	Dec. 31, 1890.
Security Loan and Savings Company	March 15, 1870.	Thomas R. Merritt	E. F. Dwyer	St. Catharines	Dec. 31, 1890.
Elgin Loan and Savings Company	May 1, 1879.	Edward Miller	George Rowley	St. Thomas	Dec. 31, 1890.
Southern Loan and Savings Company	..... 1870.	Samuel Eccles	A. J. Allworth	St. Thomas	Dec. 31, 1890.
Southwestern Farmers' and Mechanics' Savings and Loan Society	Feb. 18, 1875.	E. W. Gustin	W. E. Leonard	St. Thomas	Dec. 31, 1890.
Star Loan Company	Aug. 31, 1881.	G. E. Casey, M.P	D. M. Tait	St. Thomas	Feb. 28, 1891.
The St. Thomas Loan Company	August, 1887.	George Scott	Alexander E. Wallace	St. Thomas	Dec. 31, 1890.
Huron and Lambton Loan and Savings Company	Nov., 1877.	James Flintoft	Michael Fleming	Sarnia	Dec. 31, 1890.

LOAN AND INVESTMENT COMPANIES.—*Continued.*

Name of Company.	When Organised.	President.	Manager.	Head Office.	For year ending—
Lambton Loan and Investment Company	1844.	Chas. Mackenzie, M.P.P.	Robert S. Gurd	Sarnia	June 30, 1890.
British Mortgage Loan Company	October, 1877.	James Trow, M.P	William Buckingham	Stratford	Dec. 31, 1890.
Stratford Building and Savings Society	Aug. 22, 1889.	W. R. Tiffin	D. B. Burritt	Stratford	Sept. 30, 1890.
Bristol and West of England Canadian Land Mortgage and Investment Company	March 25, 1878.	Sir George W. Edwards. / T. S. Stayner	William Smith & Co. / William Kersteman, jr.	Bristol, Eng / Toronto	Dec. 31, 1890.
British Canadian Loan and Investment Company	July 1, 1877.	A. H. Campbell	R. H. Tomlinson	Toronto	Dec. 31, 1890.
Building and Loan Association	March 1, 1870.	L. W. Smith, Q.C.	Walter Gillespie	Toronto	Dec. 31, 1890.
Canadian Homestead Loan and Savings Association	Sept., 1886.	John Hillock	Appleton J. Pattison	Toronto	Sept. 30, 1890.
Canada Landed Credit Company	1858.	John Lang Blaikie	David McGee	Toronto	Dec. 31, 1890.
Canada Permanent Loan and Savings Company	1855.	John Herbert Mason	John Herbert Mason	Toronto	Dec. 31, 1890.
City and County Loan Association	Jan. 26, 1889.	Ambrose Kent	J. C. Laidlaw	Toronto	Dec. 31, 1890.
Dovercourt Land, Building and Savings Company	Dec. 16, 1885.	James Brandon	James T. Lockie	Toronto	Dec. 31, 1890
Farmers' Loan and Savings Company	October, 1871.	William Mulock, M.P	George S. C. Bethune	Toronto	Apr. 30, 1890
Freehold Loan and Savings Company	May, 1859.	A. T. Fulton	Hon. S. C. Wood	Toronto	Apr 30, 1890.
Home Savings and Loan Company	April 25, 1877.	Hon. Frank Smith	James Mason	Toronto	Dec. 31, 1890.
Imperial Loan and Investment Company	Sept. 14, 1869	Sir Alex. Campbell	E. H. Kertland	Toronto	Dec. 31, 1890.
Land Security Company	Dec., 1873.	Major George Greig	W. Innes Mackenzie	Toronto	Dec. 31, 1890.
London and Canadian Loan and Agency Company	Jan. 1, 1873	Sir W. P. Howland, C.B.	James Ferrier Kirk	Toronto	Aug. 31, 1890.
London and Ontario Investment Company	May 15, 1877.	Hon. Frank Smith	Alfred Morgan Cosby	Toronto	June 30, 1890.
National Investment Company of Canada	1876.	John Hoskin, Q.C.	Andrew Rutherford	Toronto	Dec. 31, 1890.
North British Canadian Investment Company	Oct. 14, 1876.	Peter Sturrock	James L. Scarth	Toronto / Glasgow, Scot.	Dec. 31, 1890.
North of Scotland Canadian Mortgage Company	Dec. 17, 1875.	James W. Barclay, M.P.	William Smith / Osler and Hammond	Aberdeen, Scot. / Toronto	Nov. 11, 1890.
Ontario Industrial Loan and Investment Company	Jan. 5, 1880.	James Gormley	Edmund T. Lightbourn	Toronto	Dec. 31, 1890.
Peoples' Loan and Deposit Company	March, 1875.	William Elliot	James Watson	Toronto	Dec. 31, 1890.
Real Estate Loan Company of Canada	Dec., 1879.	T. R. Wadsworth	Benjamin Morton	Toronto	Dec. 31, 1890.
Scottish Ontario and Manitoba Land Company	Dec. 15, 1879.	Robert Young	James L. Scarth	Glasgow, Scot. / Toronto	Dec. 31, 1890.
Sons of England Building, Loan and Savings Association	June 24, 1889.	Stephen B. Pollard, M.D.	F. J. Davis	Toronto	Dec. 31, 1890.
Toronto Land and Loan Company	May 27, 1881.	Arthur Harvey	W. C. Beddome	Toronto	Aug. 31, 1890.
Trust and Loan Company of Canada	Oct. 1, 1851.	Charles Morrison	W. W. Ravenhill / William B. B. Simpson.	London, Eng / Toronto	Sept 30, 1890.
Union Loan and Savings Company	March, 1865.	James McGee	William Maclean	Toronto	Dec. 31, 1890.
Western Canada Loan and Savings Company	March, 1863.	Hon. George W. Allan	Walter S. Lee	Toronto	Dec. 31, 1890.
Oxford Permanent Loan and Savings Society	1865.	William Grey	C. S. Beard	Woodstock	Dec. 31, 1890.

STATISTICS OF

LOAN & INVESTMENT COMPANIES.

LOAN AND INVESTMENT COMPANIES.

TABLE I. Statement of affairs showing the capital stock, liabilities and assets of 67 Loan and Investment Companies in the Province of Ontario for the year 1890, as required to be furnished by Chapter 169, Section 83, R. S. O. 1887, or by provisions of special charters; also a miscellaneous summary of the business transacted during the year.

Schedule.	Barrie Loan, Barrie.	Hastings Loan, Belleville.	Royal Loan, Brantford.	Chatham Loan, Chatham.	Huron and Bruce Loan, Goderich.	Guelph and Ontario, Guelph.	Hamilton Provident, Hamilton.	Hamilton Homestead, Hamilton.	Landed Banking, Hamilton.	Frontenac Loan, Kingston.
Capital Stock.	$	$	$	$	$	$	$	$	$	$
Capital authorised	250,000	250,000	500,000	1,000,000	500,000	500,000	1,500,000	1,000,000	700,000	Unlimited
Capital subscribed	250,000	225,000	500,000	328,600	222,800	500,000	1,500,000	323,860	700,000	200,000
Liabilities.										
Liabilities to stockholders :										
Stock fully paid up	.....	.....	492,606	.....	120,306	333,100	1,000,000	.....	.....	200,000
Stock on which has been paid	117,500	191,244	3,826	125,251	41,895	30,000	100,000	74,869	599,400	.....
Accumulating stock	.....	.....	.....	.....	.....	4,687	.....	.....	28,538	.....
Reserve fund	8,500	15,500	82,000	7,000	.....	112,000	255,000	.....	103,000	30,000
Dividends declared and unpaid	4,112	5,716	17,368	.....	.....	14,606	38,500	.....	17,702	6,162
Contingent fund and unappropriated profits	1,475	2,614	8,512	.....	6,733	2,580	25,861	32,788	13,498	4,707
Total	131,587	215,074	604,306	132,251	168,928	496,973	1,419,361	107,657	762,138	240,869
Liabilities to the public :										
Deposits	30,194	126,077	407,444	231,510	90,521	387,992	1,008,298	.....	565,296	250,281
Debentures payable in Canada	.....	.....	270,386	1,111	.....	502,485	217,380	.....	245,767	.....
Debentures payable elsewhere	.....	48,667	.....	.....	.....	.....	*1,102,397	.....	120,340	.....
Interest on debentures due and accrued	.....	.....	4,543	.....	.....	10,883	12,920	.....	5,304	.....
Interest on deposits due and accrued	.....	.....	3,616	.....	3,542	5,799	.....	.....	1,125	.....
Owing to banks	20,982	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other liabilities	5	.....	.....	.....	.....	.....	29,051	.....	906	20
Total	51,181	174,744	685,989	232,621	94,063	907,159	2,370,046	.....	938,738	250,301
Assets.										
Secured loan assets :										
Real estate of—										
General borrowers	177,526	324,945	1,208,515	316,149	248,900	1,344,828	3,279,904	100,172	1,589,955	260,118
Directors and executive officers of company	.....	.....	.....	.....	.....	.....	.....	.....	1,809	3,497
Held under power of sale	5,009	23,000	19,012	20,444	.....	.....	116,500	4,200	48,730	38,335
Shareholders' stock	.....	2,431	8,903	432	3,000	3,111	4,093	.....	.....	11,039
Directors and officers of company on their stock	.....	.....	4,784	.....	.....	.....	328	.....	.....	24,455
Otherwise secured	.....	.....	.....	.....	.....	3,443	52,856	.....	12,036	25,353
Total	182,535	350,376	1,241,214	337,025	251,900	1,351,382	3,453,681	104,372	1,652,530	362,797

Property assets :											
Municipal and school section securities, cash value							7,535	56,917		7,560	
Office furniture and fixtures		1,638	257	540	590				250		189
Cash on hand	233	1,509	3,091	1,310	1,334			1,336		7,198	
Cash in banks		11,096	45,733	16,936	6,505	45,215		105,973	1,268	3,588	6,227
Special deposit in banks		25,199						75,000		30,000	24,189
Office premises				9,061				89,000			3,716
Real estate absolutely foreclosed											33,234
Real estate otherwise acquired					2,662			7,500			1,510
Other property									1,767		59,308
Total	233	39,442	49,081	27,847	11,091	52,750	335,726	3,285	48,346	128,373	
Grand total *assets* or *liabilities*	182,768	389,818	1,290,295	364,872	262,991	1,404,132	3,789,407	107,657	1,700,876	491,170	
Miscellaneous.											
Dividends declared in year — Rate per cent.	7.	6	7.	7.	6.	8.	7.		6.	6.	
Dividends declared in year — Amount	8,225	11,414	34,729	8,013	8,797	29,102	77,000		37,138	12,000	
Loaned during year	24,889	72,004	154,666	48,743	46,415	248,962	621,370	14,814	258,147	52,039	
Received from borrowers (principal and interest)	28,281	69,128	231,724	43,335	26,904	264,342	800,720	5,848	293,695	97,897	
Received from depositors	61,147	161,609	748,686	439,171	149,478	852,862	1,058,482	†23,002	1,279,823	370,004	
Repaid depositors	57,243	129,059	756,428	426,996	126,717	774,424	996,768	†21,901	1,328,859	380,218	
Debentures issued			100,797	1,000		303,982	110,717		148,545		
Debentures repaid			115,188	200		321,564	128,090		111,100		
Debentures to mature within one year			96,964	100		117,695	188,758		97,926		
Average rate of interest — For debentures. p.c.		5.00	4.75	4.50		4.52	4.23		4.86		
Average rate of interest — For deposits p.c.	4.00	4.00	3.75	4.00	4.13	3.25	3.83		4.04	3.20	
Interest paid and accrued — On debentures		2,433	18,143	13		24,482	55,440		16,044		
Interest paid and accrued — On deposits	2,301	4,035	16,926	8,497	3,840	10,918	36,352		22,681	7,884	
Cost of management	756	2,932	6,225	4,161	1,326	7,418	26,734	1,275	15,327	4,691	
Invested and secured by mortgage — In Ontario	182,535	347,945	1,227,527	336,593	248,900	1,344,828	3,271,127	‡104,372	1,408,427	206,657	
Invested and secured by mortgage — Elsewhere							125,277		232,067	95,293	
Mortgages by instalments	643		11,592	63,239	248,900	183,995	2,269,953		57,668	301,950	
Mortgages at stated period	181,892	347,945	1,215,935	273,354		1,160,833	1,126,451	104,372	1,582,826		
Average interest on total amount secured by mortgage. p.c.	7.00	6.85	6.40	7.00	6.50	6.35	6.51	6.00	6.74	7.25	
Average interest on amount loaned on mortgages in year. p.c.	7.00	6.50	6.44	7.05	6.50	6.29	6.87	6.00	6.74	6.00	
Mortgages on which compulsory proceedings have been taken — Number	5.	4.	17.	1.		3.	41.		20.	2.	
Mortgages on which compulsory proceedings have been taken — Amount	11,745	11,000	46,219	6,206		14,869	139,132		34,813	4,093	
Value of mortgaged property held for sale	7,500	32,000	22,706	21,300			124,856	4,200	48,730	38,000	
Amount chargeable against such property	5,009	23,000	19,012	20,444			116,500	4,200	48,730	38,335	

* Including $378,383 of debenture stock. † Members only for dues and withdrawals. ‡ In county of Wentworth only.

TABLE I. LOAN AND INVESTMENT COMPANIES—*Continued.*

Schedule.	Ontario Building, Kingston.	Agricultural Savings, London.	Canadian Savings, London.	Dominion Savings, London.	Empire Loan, London.	Huron and Erie Loan, London.	London Loan, London.	Ontario Investment, London.	Ontario Loan, London.	Royal Standard, London.
Capital Stock.	$	$	$	$	$	$	$	$	$	$
Capital authorised	250,000	1,000,000	Unlimited	1,000,000	1,000,000	2,500,000	Unlimited	3,000,000	Unlimited	1,000,000
Capital subscribed	250,000	630,200	750,000	1,000,000	215,000	2,500,000	679,700	2,665,600	2,000,000	240,000
Liabilities.										
Liabilities to stockholders :										
Stock fully paid up	250,000				79,400	1,000,000			1,000,000	
Stock on which has been paid		617,300	685,550	928,550	26,851	300,000	631,500	739,173	200,000	177,000
Accumulating stock		6,643	6,682	3,852			2,729			3,931
Reserve fund		103,000	180,000	10,000	8,267	581,000	68,500		379,000	19,500
Dividends declared and unpaid	6,304	21,606		27,856		58,021			42,000	5,310
Contingent fund and unappropriated profits	13,638	1,646	19,064	40,076	444	2,484	41		168	1,205
Total	269,942	750,195	891,296	1,010,334	114,962	1,941,505	702,770	739,173	1,621,168	206,946
Liabilities to the public :										
Deposits	174,351	559,840	633,037	546,727	109,338	1,202,628	449,785	2,132	477,251	156,194
Debentures payable in Canada		179,370	164,786	72,061		438,114	120,876		97,980	18,000
Debentures payable elsewhere		134,860	36,500	906,951		1,119,265	30,903		1,307,519	
Interest on debentures due and accrued		3,683	4,166	7,157		17,440	2,415		15,027	450
Interest on deposits due and accrued						478				
Owing to banks			2,915	26						
Other liabilities	503	968		225	275			†583,315		
Total	174,854	878,721	841,404	1,533,147	109,613	2,778,025	603,979	585,447	1,897,777	174,644
Assets.										
Secured loan assets :										
Real estate of –										
General borrowers	329,295	1,482,293	1,565,767	2,181,661	175,733	4,505,637	1,134,893	422,842	3,272,357	321,353
Directors and executive officers of company	3,746							19,489	5,676	
Held under power of sale	57,655	38,928	27,400	224,210	3,301		27,140	42,794	24,317	23,050
Shareholders' stock	7,524	19,408	108,752	49,539	44,522		29,896	21,307	9,147	17,254
Directors and officers of company on their stock	1,975		2,224				64,157		2,628	4,352
Otherwise secured			736					141,221		
Total	400,195	1,540,629	1,704,879	2,455,410	223,556	4,505,637	1,256,086	647,653	3,314,125	366,009

Property assets :										
Municipal and school section securities, cash value	237	1,774	1,365						7,575	
Office furniture and fixtures	87	500		1,000	507		400			300
Cash on hand	73	4,349	788	201	324	6,627	4,691			144
Cash in banks	38,336	31,551		86,870	188	64,439	45,572	12,522	110,454	15,137
Special deposit in banks		20,000				61,280				
Office premises		28,000	24,073			19,000			72,000	
Real estate absolutely foreclosed										
Real estate otherwise acquired	5,672	1,686	1,595			1,197		17,864	791	
Other property	196	427				61,350		*646,581	14,000	
Total	44,601	88,287	27,821	88,071	1,019	213,893	50,663	676,967	204,820	15,581
Grand total *assets* or *liabilities*	444,796	1,628,916	1,732,700	2,543,481	224,575	4,719,530	1,306,749	1,324,620	3,518,945	381,590
Miscellaneous.										
Dividends declared in year — Rate per cent	5½.	7.	7.	6.	6.	9.	7.		7.	6.
Dividends declared in year — Amount	13,750	43,571	48,496	55,934	6,289	115,174	44,227		84,000	10,752
Loaned during year	31,703	133,798	185,487	990,823	68,369	737,013	200,470	5,002	458,585	44,472
Received from borrowers (principal and interest)	60,735	286,628	260,033	567,599	70,617	688,595	344,097	277,030	801,467	71,625
Received from depositors	305,839	622,249	1,034,911	877,704	270,776	1,039,958	762,026		620,966	271,743
Repaid depositors	313,973	687,697	1,039,325	876,302	264,866	1,023,516	753,188	36	593,929	279,273
Debentures issued		166,420	106,786	665,414		709,064	88,403		367,870	2,000
Debentures repaid		196,440	84,976	85,990		551,359	108,000	790,842	669,483	400
Debentures to mature within one year		109,267	78,800	98,478		320,363	58,900		211,550	
Average rate of interest — For debentures	p.c.	4.42	4.86	4.37		4.32	4.92		4 25	5.00
Average rate of interest — For deposits	p.c. 3.50	4.20	4.23	4.50	4.62	4.00	4.84		4.18	4.30
Interest paid and accrued — On debentures		15,165	9,576	35,152		66,479	9,901	13,647	68,661	820
Interest paid and accrued — On deposits	5,854	2 ,821	27,027	26,104	5,053	46,537	21,512	88	19,247	6,639
Cost of management	2,739	10,649	9,814	11,751	2,649	29,992	6,215	12,668	24,565	2,155
Invested and secured by mortgage — In Ontario	390,696	1,521,221	1,593,167	2,405,871	179,034	4,505,637	1,162,033	464,251	3,302,350	341,403
Invested and secured by mortgage — Elsewhere								20,874		
Mortgages by instalments	137,985	29,337	22,954		77,381	590,724	762,909		1,528,622	2,050
Mortgages at stated period	252,711	1,491,884	1,570,213	2,405,871	101,653	3,914,913	399,124	485,125	1,773,728	342,353
Average interest on total amount secured by mortgage.	p.c. 5.13	6.39	6.49	6.55	6.75	6.33	6.50		6.38	6 to 9
Average interest on amount loaned on mortgages in year.	p.c. 6.05	6.19	6.31	6.49	6.50	6.30	6.50		6.32	6.25
Mortgages on which compulsory proceedings have been taken — Number	12.	6.	8.	41.	1.	20.	17.	5.	11.	4.
Mortgages on which compulsory proceedings have been taken — Amount	42,680	11,082	21,024	40,292	2,504	75,490	54,039	14,113	44,710	25,100
Value of mortgaged property held for sale	48,600	38,928	35,600	238,040	3,500		40,150	42,794	31,000	23,050
Amount chargeable against such property	57,655	38,928	27,400	224,210	3,301		27,140	42,794	24,317	23,050

*In liquidation ; estimated loss in realising on assets. †Including $577,465 owing to Dominion Savings.

TABLE I. LOAN AND INVESTMENT COMPANIES.—*Continued.*

Schedule.	Orangeville Building, Orangeville.	Ontario Loan, Oshawa.	Dominion Investment, Ottawa.	Metropolitan Loan, Ottawa.	Ottawa Building, Ottawa.	Owen Sound, Grey and Bruce Loan, Owen Sound.	Central Canada Loan, Peterborough.	Crown Savings, Petrolea.	Midland Loan, Port Hope.	Security Loan, St. Catharines.
Capital Stock.	$	$	$	$	$	$	$	$	$	$
Capital authorised	50,000	300,000	Unlimited	320,000	Unlimited	300,000	5,000,000	1,000,000	410,000	300,000
Capital subscribed	24,550	300,000	18,600	320,000	179,800	157,450	2,000,000	175,000	410,000	275,000
Liabilities.										
Liabilities to stockholders :										
Stock fully paid up	15,450		14,600			27,500	500,000	100,350	310,000	
Stock on which has been paid	5,831	299,295	1,101	310,560	82,728	36,731	300,000	34,221	20,000	274,156
Accumulating stock			28	32						
Reserve fund	231	75,000		30,000			192,000	9,000	68,000	35,000
Dividends declared and unpaid	24			9,318		1,877	24,000	3,799	11,025	8,225
Contingent fund and unappropriated profits	1,185	4,347	1,919	13,617	56	3	21 546	325	5,736	2,203
Total	22,721	378,642	17,648	363,527	82,784	66,111	1,037,546	147,695	414,761	319,584
Liabilities to the public :										
Deposits		271,038		44,823		16,569	402,938	5 ,957	227,369	271,564
Debentures payable in Canada		186,191					435,750	100	487,305	28,063
Debentures payable elsewhere							1,044,168			
Interest on debentures due and accrued							13,921			
Interest on deposits due and accrued						66	10,446			
Owing to banks	46	63,084				1,331				
Other liabilities	15		851		10	3,139	58,927			1,632
Total	61	520,313	851	44,823	10	21,105	1,966,150	54,057	714,674	301,259
Assets.										
Secured loan assets :										
Real estate of—										
General borrowers	22,782	735,121	16,285	284,416	56,900	86,507	2,207,825	195,916	1,035,045	518,091
Directors and executive officers of company		2,548		4,196	24,000		28,900			
Held under power of sale		60,000							19,714	51,173
Shareholders' stock		12,256		7,295					8,921	5,479
Directors and officers of company on their stock		7,667		10,653					7,370	
Otherwise secured		13,483	203		1,475		4717,605		1,685	6,182
Total	22,782	831,075	16,488	306,560	82,375	86,507	2,954,330	195 916	1,072,735	580,925

Property assets:										
Municipal and school section securities, cash value				624				4,005		
Office furniture and fixtures		500		460		25		14	569	231
Cash on hand		351	478			239	734		800	
Cash in banks		759	351	4,173	419		48,632	1,817	33,601	5,871
Special deposit in banks		55,270								
Office premises		11,000		16,116					6,500	
Real estate absolutely foreclosed				80,417					13,650	
Real estate otherwise acquired			1,182							
Other property						445			1,480	*33,816
Total		67,880	2,011	101,790	419	709	49,366	5,836	56,700	39,918
Grand total *assets* or *liabilities*	22,782	898,955	18,499	408,350	82,794	87,216	3,003,696	201,752	1,129,435	620,843
Miscellaneous.										
Dividends declared in year — Rate per cent.		7.		6.		6.	6.	6.	7.	6½.
Dividends declared in year — Amount		20,950		18,635		3,330	48,000	7,418	21,525	17,820
Loaned during year	2,388	98,561	1,913	50,408	6,000	39,951	741,276	47,565	180,519	135,937
Received from borrowers (principal and interest)	2,968	151,639	5,223	56,074	5,924	5,961	586,137	30,033	186,919	162,204
Received from depositors		264,404		50,693		37,185	312,947	36,864	346,058	325,941
Repaid depositors		272,132		35,145		20,615	278,807	25,206	357,537	318,827
Debentures issued		122,800					787,715	100	612,012	
Debentures repaid		132,600					501,326		439,019	1,741
Debentures to mature within one year							313,929		216,027	7,000
Average rate of interest — For debentures. p.c.		5.00					4.64	5.00	4.85	5.00
Average rate of interest — For deposits p.c.		4.25		4.00		4.25	4.80	4.50	3.97	4.00
Interest paid and accrued — On debentures		9,310					56,298		21,842	1,339
Interest paid and accrued — On deposits		10,948		1,322		444	17,168	2,002	9,620	10,708
Cost of management	112	5,551	98	2,126	540	434	28,226	1,285	7,138	4,217
Invested and secured by mortgage — In Ontario	22,782	797,669	16,285	288,612	80,900	86,507	2,236,725	195,916	1,054,759	569,264
Invested and secured by mortgage — Elsewhere										
Mortgages by instalments	4,271	400,000	16,084	6,394	80,900	8,890		112,574	19,267	382,121
Mortgages at stated period	18,511	397,669	201	282,218		77,617	2,236,725	83,342	1,035,492	187,143
Average interest on total amount secured by mortgage p.c.	7.00	6.00	7.00	6.50	6.50	6.50	6.35	6.69	6.63	6.50
Average interest on amount loaned on mortgages in year. p.c.	7.00	6 25	7.00	6.75	6.00	6.75	6.16	6.50	6.40	6.83
Mortgages on which compulsory proceedings have been taken — Number		4.	1.				15.		6.	
Mortgages on which compulsory proceedings have been taken — Amount		14,000	1,395				40,997		22,126	
Value of mortgaged property held for sale		75,000							17,150	43,258
Amount chargeable against such property		60,000							19,714	51,173

* Including $28,729, Macrae's defalcation account. † Including $715,489 secured on bonds, stocks and debentures.

TABLE I. LOAN AND INVESTMENT COMPANIES—*Continued.*

Schedule.	Elgin Loan, St. Thomas.	Southern Loan, St. Thomas.	Southwestern Farmers' and Mechanics', St. Thomas.	Star Loan, St. Thomas.	St. Thomas Loan, St. Thomas.	Huron and Lambton Loan, Sarnia.	Lambton Loan, Sarnia.	British Mortgage, Stratford.	Stratford Building, Stratford.	Bristol and West of England, Toronto.
Capital Stock.	$	$	$	$	$	$	$	$	$	$
Capital authorised	625,000	Unlimited	Unlimited	270,000	500,000	1,000,000	1,000,000	5,000,000	Unlimited	2,433,333
Capital subscribed	625,000	400,000	158,950	238,800	400,000	398,100	500,000	450,000	84,200	677,075
Liabilities.										
Liabilities to stockholders :										
Stock fully paid up		400,000		142,100				130,900		
Stock on which has been paid	182,857		136,653	31,872	138,010	289,950	485,735	175,596		135,415
Accumulating stock			51			36,769			3,836	
Reserve fund	18,000	63,000	9,500	11,000		53,600	210,000	59,000		14,600
Dividends declared and unpaid			4,770					10,744		
Contingent fund and unappropriated profits	849	4,236	1,433	1,962	2,075	3	1,912	44	122	12,073
Total	201,706	467,236	152,407	186,934	140,085	380,322	697,647	376,284	3,958	162,088
Liabilities to the public :										
Deposits	128,556	251,691	88,679	128,659	115,186	325,212	426,233	443,871		
Debentures payable in Canada					5,000		189,439			
Debentures payable elsewhere										1,083,298
Interest on debentures due and accrued							4,311			11,918
Interest on deposits due and accrued								17,909		
Owing to banks						10,570	15,646	12,991	655	
Other liabilities				318					3,480	11,785
Total	128,556	251,691	88,679	128,977	120,186	335,782	635,629	474,771	4,135	1,107,001
Assets.										
Secured loan assets :										
Real estate of—										
General borrowers	307,967	664,236	215,754	294,522	253,118	590,554	1,205,951	808,968	7,700	1,199,553
Directors and executive officers of company	2,575	4,160					3,848	22,187		
Held under power of sale	10,478	6,043	11,754				10,635	19,600		41,410
Shareholders' stock	1,711	6,876	1,258	8,120	400	39,437	26,828	300		
Directors and officers of company on their stock		1,529	966	868			2,239			
Otherwise secured						82,898	69,445			
Total	322,731	682,844	229,672	303,510	253,518	712,889	1,318,946	851,055	7,700	1,240,963

Property assets :										
Municipal and school section securities, cash value		1,477								
Office furniture and fixtures							1,000			
Cash on hand			40			3,215	5,330		157	4
Cash in banks	4,986	19,846	11,374	9,273	6,753					27,261
Special deposit in banks										
Office premises				3,025			8,000			
Real estate absolutely foreclosed		14,760								
Real estate otherwise acquired	2,546									
Other property				103					236	861
Total	7,531	36,083	11,414	12,401	6,753	3,215	14,330		393	28,126
Grand total *assets* or *liabilities*	330,262	718,927	241,086	315,911	260,271	716,104	1,333,276	851,055	8,093	1,269,089
Miscellaneous.										
Dividends declared in year { Rate per cent.	6.	7.	7.	6.	6.	7.	8.	7.	7.	8.
Dividends declared in year { Amount	10,761	28,000	9,514	10,272	6,427	22,857	36,624	21,020	91	10,833
Loaned during year	30,124	42,942	15,957	65,314	120,293	142,677	203,750	157,449	7,700	238,143
Received from borrowers (principal and interest)	45,953	101,910	57,463	60,318	33,433	162,056	227,035	173,778	464	301,303
Received from depositors	253,482	379,501	116,719	154,747	292,826	406,916	589,608	556,204		
Repaid depositors	255,500	380,953	129,739	132,032	256,560	395,238	612,082	514,312		
Debentures issued					5,000		85,060			52,560
Debentures repaid							99,814			33,093
Debentures to mature within one year							96,937			225,690
Average rate of interest { For debentures.	p.c.				5.00		4.13			4.30
Average rate of interest { For deposits	p.c. 4.25	4.00	4.25	4.25	4.26	4.60	3.88	4.00		
Interest paid and accrued { On debentures					84		8,196			46,876
Interest paid and accrued { On deposits	5,269	9,558	3,605	4,890	3,451	13,909	16,717	17,909		
Cost of management	2,125	3,991	2,114	1,882	1,561	4,432	5,473	4,734	118	19,422
Invested and secured by mortgage... { In Ontario	321,020	674,439	227,508	294,522	253,118	590,554	1,220,434	850,755	7,700	1,240,963
Invested and secured by mortgage... { Elsewhere										
Mortgages by instalments	229,495	385,330	178,016		189,878				7,700	15,150
Mortgages at stated period	91,525	289,109	49,492	294,522	63,240	590,554	1,220,434	850,755		1,225,813
Average interest on total amount secured by mortgage.	p.c. 6.25	6.40	7.00	6.50	6.67	6.60	6.50	6.29		6.75
Average interest on amount loaned on mortgages in year.	p.c. 6.50	6.25	6.50	6.44	6.39	6.50	6.25	6.25		6.80
Mortgages on which compulsory proceedings have been taken. { Number	1.	15.	4.	2.			4.	11.		4.
Mortgages on which compulsory proceedings have been taken. { Amount	3,228	12,752	5,588	4,200			10,275	31,200		1,975
Value of mortgaged property held for sale	15,000	6,043	10,800				10,700	19,600		45,000
Amount chargeable against such property	10,478	6,043	11,754				10,635	19,600		41,410

TABLE I. LOAN AND INVESTMENT COMPANIES—*Continued.*

Schedule.	British Canadian, Toronto.	Building and Loan, Toronto.	Canadian Homestead, Toronto.	Canada Landed Credit, Toronto.	Canada Permanent, Toronto.	City and County Loan, Toronto.	Dovercourt Land, Toronto.	Farmers' Loan, Toronto.	Freehold Loan, Toronto.	Home Savings, Toronto.
Capital Stock.	$	$	$	$	$	$	$	$	$	$
Capital authorised	5,000,000	750,000	1,000,000	2,000,000	5,000,000	500,000	500,000	1,057,250	3,800,000	2,000,000
Capital subscribed	1,620,000	750,000	436,800	1,500,000	5,000,000	31,600	64,550	1,057,250	3,221,500	1,500,000
Liabilities.										
Liabilities to stockholders :										
Stock fully paid up		750,000			2,000,000	1,750		500,000	841,000	
Stock on which has been paid	322,608		60,707	664,000	600,000	8,935	63,650	111,430	476,100	150,000
Accumulating stock										
Reserve fund	82,000	108,000		199,200	1,435,000		25,000	128,514	628,918	115,000
Dividends declared and unpaid	11,291	22,500		25,823	150,203	514	2,228	21,400	65,855	5,250
Contingent fund and unappropriated profits	8,049	46,264	12,999		115,156	300	11,063		56,545	28,100
Total	423,948	926,764	73,706	889,023	4,300,359	11,499	101,941	761,344	2,068,418	298,350
Liabilities to the public :										
Deposits	10,340	235,483	206		982,058			443,415	786,418	1,659,266
Debentures payable in Canada	153,176	133,838		36,690	517,902		3,500	210,241	712,063	
Debentures payable elsewhere	1,233,903	521,358		1,475,128	$5,862,308			419,799	2,461,996	
Interest on debentures due and accrued	15,543			10,348	54,964		15	14,454	64,014	
Interest on deposits due and accrued					140,400				15,371	63,251
Owing to banks								50,000		
Other liabilities	3,181	1,032		5,761	10,975		21,080			2,500
Total	1,416,143	891,711	206	1,527,927	7,568,607		24,595	1,137,909	4,039,862	1,725,017
Assets.										
Secured loan assets :										
Real estate of—										
General borrowers	1,711,944	1,470,623	68,375	2,171,490	10,865,665	10,929	79,120	1,799,944	5,319,827	882,618
Directors and executive officers of company										26,258
Held under power of sale	80,101				434,375			72,370	294,541	1,690
Shareholders' stock	1,200	13,116			37,290			9,025	30,581	3,142
Directors and officers of company on their stock					10,975					
Otherwise secured	1,000		154	23,276			17			**968,993
Total	1,794,245	1,483,739	68,529	2,194,766	11,348,305	10,929	79,137	1,881,339	5,644,949	1,882,701

Property assets :											
Municipal and school section securities, cash value	3,615				224,051				2,365	45,815
Office furniture and fixtures	446		125			35		329	1,715	2,000
Cash on hand	2,241	1,735		203	362	16	1,594	936	23,330	19,439
Cash in banks	24,485	21,678	5,258	162,062	175,092	519	3,976	14,425	174,915	57,562
Special deposit in banks		25,226							35,000	
Office premises		80,000		40,000	120,000				48,853	15,850
Real estate absolutely foreclosed		*204,782		19,919					87,469	
Real estate otherwise acquired								26,925	39,260	
Other property	15,059	1,315			1,156		14,904	2,224	50,424	
Total	45,846	334,736	5,383	222,184	520,661	570	47,399	17,914	463,331	140,666
Grand total *assets* or *liabilities*	1,840,091	1,818,475	73,932	2,416,950	11,868,966	11,499	126,536	1,899,253	6,108,280	2,023,367
Miscellaneous.										
Dividends declared in year — Rate per cent	7.	6.		7.	12.	6.	7	7.	10.	7.
Dividends declared in year — Amount	22,581	45,000		16,180	300,000	515	1,456	42,800	131,692	10,500
Loaned during year	274,871	285,400	16,825	211,297	2,115,055	7,351		440,425	1,122,186	1,464,299
Received from borrowers (principal and interest)	308,161	257,395	3,885	402,609	2,355,496	3,206		414,611	1,198,415	1,547,814
Received from depositors		634,891	†30,273		345,523			482,382	500,459	4,061,038
Repaid depositors		630,412	15,348		381,809			455,472	523,636	4,128,894
Debentures issued	164,968	102,123		188,795	847,071		1,000	120,100	684,441	
Debentures repaid	107,280	60,510		158,767	402,165		4,500	5,347	483,694	
Debentures to mature within one year	142,339	101,445		188,890	773,509		1,000	60,070	416,150	
Average rate of interest — For debentures	p.c. 4.54	4 58		4.40	4.18		5.00	5.00	4.38	
Average rate of interest — For deposits	p.c. 4.43	3.31	5.00		3.90			4.25	4.00	4.00
Interest paid and accrued — On debentures	62,045	29,079		73,766	232,254		300	28,663	137,311	
Interest paid and accrued — On deposits	444	7,838			42,954			19,009	31,620	66,881
Cost of management	14,504	13,185	1,706	24,054	82,485	274	2,665	10,588	49,282	16,375
Invested and secured by mortgage — In Ontario	1,537,116	1,329,133	‡68,375	1,752,833	9,788,874	10,929	79,120	1,872,314	§4,530,417	910,566
Invested and secured by mortgage — Elsewhere	254,929	141,490		418,657	1,511,166				§1,083,951	
Mortgages by instalments	781,314	73,643		219,808	9,736,338	2,943	79,120	25,982	853,428	234,627
Mortgages at stated period	1,010,731	1,396,980	68,375	1,951,682	1,563,702	7,986		1,846,332	4,760,940	675,939
Average interest on total amount secured by mortgage	p.c. 6.46	6.86	6.00	7.00	6.90	6.94		7.00	6.68	6.00
Average interest on amount loaned on mortgages in year	p.c. 6.93	6.75	6.00	6.75	7.02	7.00		6 75	7.15	6 00
Mortgages on which compulsory proceedings have been taken — Number	8.	7.		31.	139.			16.	43.	1.
Mortgages on which compulsory proceedings have been taken — Amount	16,872	12,986		59,346	255,759			13,862	167,324	2,281
Value of mortgaged property held for sale	83,750				546,150			80,000	289,761	2,300
Amount chargeable against such property	80,101				434,375			72,370	294,541	1,690

*Acquired by foreclosure or otherwise. †Members only for dues and withdrawals. ‡In Toronto. §Including $825,104 of debenture stock.
6.88 per cent. in Ontario, 8 per cent. elsewhere. **Including $948,552 on collateral security of bonds, stocks and debentures.

TABLE I. LOAN AND INVESTMENT COMPANIES—*Continued.*

Schedule.	Imperial Loan, Toronto.	Land Security, Toronto.	London and Canadian, Toronto.	London and Ontario, Toronto.	National Investment, Toronto.	North British Canadian, Toronto.	North of Scotland, Toronto.	Ontario Industrial, Toronto.	Peoples' Loan, Toronto.
Capital Stock.	$	$	$	$	$	$	$	$	$
Capital authorised	1,000,000	5,000,000	5,000,000	2,500,000	2,000,000	2,433,333	3,650,000	500,000	600,000
Capital subscribed	629,850	1,377,825	5,000,000	2,500,000	1,700,000	2,433,333	3,650,000	466,800	600,000
Liabilities.									
Liabilities to stockholders :									
Stock fully paid up								58,000	
Stock on which has been paid	626,300	545,707	700,000	500,000	340,000	486,667	730,000	256,292	598,500
Accumulating stock	1,129								929
Reserve fund	123,000	545,000	360,000	130,000	102,000	82,733	292,000	185,000	112,000
Dividends declared and unpaid	21,972	27,285	28,000	17,500	13,076	17,810	35,283	11,000	20,943
Contingent fund and unappropriated profits	4,141	38,232	23,601			§39,318	6,269	12,513	10,437
Total	776,542	1,156,224	1,111,601	647,500	455,076	626,529	1,063,552	522,805	742,809
Liabilities to the public :									
Deposits	61,605	181,605				25,454		70,952	419,508
Debentures payable in Canada	225,931	503,235	70,000	449,114	94,883				158,000
Debentures payable elsewhere	814,769		*3,328,876	1,797,293	1,031,597	**1,761,479	2,684,298		4,867
Interest on debentures due and accrued	17,316	3,664	23,859	17,433	8,564	10,740			2,363
Interest on deposits due and accrued	4,071	2,928						1,839	
Owing to banks			50,963			28,951			6,934
Other liabilities	1,150	173,764	17,133	1,821	5,472	8,967	30,939	‖187,511	939
Total	1,124,842	865,196	3,490,831	2,265,661	1,140,516	1,835,591	2,715,237	260,302	592,611
Assets.									
Secured loan assets :									
Real estate of—									
General borrowers	1,834,131	1,001,272	3,706,208	2,690,270	1,543,175	2,187,083	3,521,983	213,338	1,252,175
Directors and executive officers of company								29,835	
Held under power of sale	7,600	13,537	250,079	137,714		116,985	25,439		71,204
Shareholders' stock	8,500							5,596	6,895
Directors and officers of company on their stock									
Otherwise secured			13,077		666		1,189	487	160
Total	1,850,231	1,014,809	3,969,364	2,827,984	1,543,841	2,304,068	3,548,611	249,256	1,330,434

Property assets :										
Municipal and school section securities, cash value	.....	.....	297,728	57,495	.....	10,740	161,223	.....	.....	.....
Office furniture and fixtures	500	.....	.....	2,333	.....	243	1,687	.....	.....	508
Cash on hand	853	.....	.....	192	365	945	142	126		800
Cash in banks	49,800	35,112	49,622	24,029	12,583	52,799	3,990	19,875		1,263
Special deposit in banks	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Office premises	.....	.....	120,000	.....	.....	.....	63,136	.....	.....	.....
Real estate absolutely foreclosed	.....	.....	119,282	.....	38,803	††50,382	.....	.....	.....	.....
Real estate otherwise acquired	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,415
Other property	.....	†971,499	46,436	1,128	.....	42,942	.....	†513,850	.....	.....
Total	51,153	1,006,611	633,068	85,177	51,751	158,051	230,178	533,851		4,986
Grand total *assets* or *liabilities*	1,901,384	2,021,420	4,602,432	2,913,161	1,595,592	2,462,119	3,778,789	783,107		1,335,420
Miscellaneous.										
Dividends declared in year — Rate per cent.	7.	10.	8.	7.	6.	6.	10.	7.		7.
Dividends declared in year — Amount	43,919	53,613	56,000	34,918	25,500	29,200	69,350	21,995		41,887
Loaned during year	351,599	290,735	627,732	316,063	218,440	460,375	456,892	59,575		161,824
Received from borrowers (principal and interest)	341,461	383,519	687,259	470,843	289,179	489,266	358,548	112,555		239,446
Received from depositors	201,805	181,821	.....	.....	.....	59,368	.....	25,617		695,130
Repaid depositors	234,874	218,894	.....	.....	.....	37,807	.....	28,808		761,603
Debentures issued	96,852	396,900	649,999	339,196	103,363	110,571	789,461	.....		37,167
Debentures repaid	32,859	363,700	719,026	320,720	70,542	118,795	762,461	.....		9,500
Debentures to mature within one year	99,248	306,000	839,034	544,807	180,281	141,126	545,514	.....		13,900
Average rate of interest — For debentures.	p.c. 4.60	5.38	4.28	4.58	4.50	4.84	4.13	.....		5.23
Average rate of interest — For deposits	p.c. 4.10	5.00	.....	.....	.....	4.50-5.00	.....	5.00		4.38
Interest paid and accrued — On debentures	67,629	28,302	151,566	99,521	51,009	88,722	108,566	.....		7,495
Interest paid and accrued — On deposits	4,071	12,610	.....	.....	.....	1,018	.....	15,965		20,317
Cost of management	17,132	20,101	38,635	34,910	14,217	18,612	48,644	5,244		8,002
Invested and secured by mortgage — In Ontario	1,465,575	1,069,809	3,956,287	2,827,984	1,179,583	1,251,888	3,547,422	243,173		1,323,379
Invested and secured by mortgage — Elsewhere	376,156	.....			363,592	1,052,180		.....		.....
Mortgages by instalments	23,625	340,196	.....	.....	.....	2,166	.....	.....		22,092
Mortgages at stated period	1,818,106	729,613	3,956,287	2,827,984	1,543,175	2,301,902	3,547,422	243,173		1,301,287
Average interest on total amount secured by mortgage.	p.c. 6.80	‡	6.38	6.62	6.80	6.75	6.80	6.25		6.19
Average interest on amount loaned on mortgages in year.	p.c. 6.86	7.00	6.50	6.63	6.75	6.75	6.75	6.25		7.00
Mortgages on which compulsory proceedings have been taken — Number	8.	3.	53.	42.	8.	9.	17.	1.		22.
Mortgages on which compulsory proceedings have been taken — Amount	30,200	7,925	105,411	66,013	27,150	18,314	25,280	1,400		62,206
Value of mortgaged property held for sale	7,600	15,890	250,079	138,653	.....	97,266	25,439	.....		75,550
Amount chargeable against such property	7,600	13,537	250,079	137,714	.....	116,985	25,439	.....		71,204

* Including certificates payable at fixed dates. · Real estate. ‡ Six per cent. on land sales and eight per cent. on loans. § Including $12,288 in anticipation of calls.
** Including $368,728 of debenture stock. †† And otherwise acquired. ‖ Mortgages payable.

TABLE I. LOAN AND INVESTMENT COMPANIES—*Concluded.*

Schedule.	Real Estate Loan, Toronto.	Scottish Ontario and Manitoba, Toronto.	Sons of England Building, Toronto.	Toronto Land, Toronto.	Trust and Loan, Toronto.	Union Loan, Toronto.	Western Canada Loan, Toronto.	Oxford Permanent Loan, Woodstock.	Totals of 67 companies.
Capital Stock.	$	$	$	$	$	$	$	$	$
Capital authorised	2,000,000	2,433,333	Unlimited	1,000,000	14,600,000	1,000,000	3,000,000	Unlimited.	102,782,249
Capital subscribed	732,600	1,216,667	63,600	104,600	7,300,000	1,000,000	3,000,000	242,450	70,672,710
Liabilities.									
Liabilities to stockholders :									
Stock fully paid up	401,050	.....	.....	.....	.....	599,680	1,000,000	230,550	12,498,330
Stock on which has been paid	66,833	608,333	4,281	75,884	1,581,667	78,290	500,000	1,763	18,688,567
Accumulating stock	.....	.....	.....	.....	.....	.....	.....	.....	99,836
Reserve fund	.....	58,400	.....	1,015	761,817	235,000	750,000	19,000	9,288,795
Dividends declared and unpaid	.....	6,171	.....	.....	.....	26,807	75,000	7,951	952,907
Contingent fund and unappropriated profits	189	*246,059	75	10,038	84,712	16,920	115,933	5,024	1,145,117
Total	468,072	918,963	4,356	86,937	2,428,196	956,697	2,440,933	264,288	42,673,552
Liabilities to the public :									
Deposits	313	12,167	.....	1,053	.....	414,091	1,105,444	88,784	17,103,403
Debentures payable in Canada	.....	.....	.....	.....	.....	140,767	585,000	.....	7,654,504
Debentures payable elsewhere	.....	352,207	.....	.....	4,312,058	733,343	2,705,743	.....	38,435,990
Interest on debentures due and accrued	.....	2,433	.....	.....	.....	.....	37,751	.....	397,599
Interest on deposits due and accrued	.....		.....	.....	.....	.....	22,000	4,006	296,847
Owing to banks	.....	.....	.....	4,000	.....	.....	.....	.....	269,094
Other liabilities	.....	9,999	.....	60,645	148,009	.....	390	69	1,386,762
Total	313	376,806	.....	65,698	4,460,067	1,288,201	4,456,328	92,859	65,544,199
Assets.									
Secured loan assets :									
Real estate of—									
General borrowers	178,324	174,151	3,600	105,714	5,547,953	2,008,537	6,374,299	329,022	92,001,824
Directors and executive officers of company	.....	.....	.....	.....	.....	.....	.....	.....	182,724
Held under power of sale	17,727	59,649	.....	.....	73,371	85,078	284,345	5,472	3,006,109
Shareholders' stock	1,274	.....	.....	.....	.....	8,572	13,193	12,174	609,797
Directors and officers of company on their stock	.....	.....	.....	.....	.....	.....	.....	.....	147,110
Otherwise secured	.....	19,432	.....	.....	3,536	1,000	1,526	334	2,163,468
Total	197,325	253,232	3,600	105,714	5,624,860	2,103,187	6,673,363	347,002	98,111,032

Property assets :									
Municipal and school section securities, cash value									892,101
Office furniture and fixtures	150	180			1,073	1,226	2,441	276	24,424
Cash on hand	1,112	595			368	89	1,490	296	101,785
Cash in banks	3,729	39,084	756	439	128,136	33,605	84,651	652	2,002,822
Special deposit in banks	5,000				239,533	45,000			640,697
Office premises					63,442	61,223	118,539	7,762	1,028,296
Real estate absolutely foreclosed	166,282				71,632				900,612
Real estate otherwise acquired		945,044		45,992					1,103,841
Other property	94,787	57,634		490	†759,219	568	16,777	1,159	3,412,141
Total	271,060	1,042,537	756	46,921	1,263,403	141,711	223,898	10,145	10,106,719
Grand total *assets* or *liabilities*	468,385	1,295,769	4,356	152,635	6,888,263	2,244,898	6,897,261	357,147	108,217,751
Miscellaneous.									
Dividends declared in year { Rate per cent.		1		7	6	8	10	6½	7.21
Dividends declared in year { Amount		6,083		5,272	94,900	53,554	152,015	15,099	2,250,027
Loaned during year	170,748		2,741	15,259	1,080,875	530,242	1,105,056	29,497	18,542,000
Received from borrowers (principal and interest)	104,075		99	25,137	943,708	515,254	1,316,440	54,176	20,469,955
Received from depositors	27	10,463		649		495,899	463,097	85,998	23,347,971
Repaid depositors		292		1,543		523,381	564,566	93,332	23,416,074
Debentures issued		35,664			809,232	216,122	434,739		10,564,009
Debentures repaid		2,312			197,319	56,798	276,604		8,523,124
Debentures to mature within one year		62,293			586,117	48,770	568,060		7,856,937
Average rate of interest { For debentures.	p.c.				4.22	4.50	4.15		
Average rate of interest { For deposits	p.c.	‡		5.00		4.00	3.85	4.50	
Interest paid and accrued { On debentures		20,015			199,353	35,787	133,637		2,035,921
Interest paid and accrued { On deposits		487		51		15,317	44,861	4,006	710,285
Cost of Management	3,570	6,194	85	1,787	64,480	15,273	53,513	1,809	846,950
Invested and secured by mortgage { In Ontario	59,003	130,995	3,600	105,714	2,751,140	2,093,615	5,044,438	334,494	95,245,657
Invested and secured by mortgage { Elsewhere	137,048	102,805			2,870,184		1,614,206		
Mortgages by instalments						893,615	6,658,644	11,990	28,285,503
Mortgages at stated period	196,051	233,800	3,600	105,714	5,621,324	1,200,000		322,504	66,960,154
Average interest on total amount secured by mortgage.	p.c. 6.10	6.50	5.50	7.00	6.55	6.75	6.90	6.75	
Average interest on amount loaned on mortgages in year.	p.c. 6.50	6.00	5.50	7.00	6.82	6.75	7.18	6.50	
Mortgages on which compulsory proceedings have been taken { Number	1	2			24	21	61		805
Mortgages on which compulsory proceedings have been taken { Amount	900	5,074			34,812	48,950	190,297		1,899,209
Value of mortgaged property held for sale	18,660	72,588			61,350	85,078	300,000	5,500	3,199,119
Amount chargeable against such property	17,727	59,649			73,371	85,078	284,345	5,472	3,006,109

* Including $240,507 paid in anticipation of calls. † Including $295,346 Dominion securities and $275,940 Consols. ‡ From 4½ to 5 p.c.

LOAN AND INVESTMENT COMPANIES.

TABLE II. Comparative statement showing the amount loaned in each year, with a yearly average for the four years 1887-90, by the 54 Companies that have reported for the full period.

Companies.	1890.	1889.	1888.	1887.	Average 1887-90.
	$	$	$	$	$
Toronto:					
Bristol and West of England	238,143	234,073	229,431	258,202	239,962
Building and Loan	285,400	331,079	289,973	263,431	292,471
Canada Landed Credit	211,297	252,550	237,547	294,325	248,930
Canada Permanent Loan	2,115,055	2,276,984	2,122,103	1,416,069	1,982,553
*Dovercourt Land and Building					
Farmers' Loan	440,425	391,567	308,119	368,263	377,093
Freehold Loan	1,122,186	1,459,559	823,144	1,289,036	1,173,481
Home Savings	1,464,299	1,586,866	1,387,119	1,222,707	1,415,248
Imperial Loan	351,599	453,068	469,764	661,421	483,963
Land Security	290,735	619,854	476,965	354,049	435,401
London and Canadian Loan	627,732	608,605	605,581	774,782	654,175
National Investment Association	218,440	316,076	299,236	274,303	277,014
North of Scotland Mortgage	456,892	841,811	486,653	481,203	566,640
Ontario Industrial Loan	59,575	174,431	108,974	75,948	104,732
Peoples Loan	161,824	297,205	242,067	248,628	237,431
Real Estate Loan	170,748	72,894	20,504	7,484	67,907
Toronto Land and Loan	15,259	64,695	9,528	42,107	32,897
Trust and Loan	1,080,875	776,601	917,430	641,985	854,223
Union Loan	530,242	672,855	435,998	429,371	517,116
Western Canada Loan	1,105,056	1,224,811	1,303,682	1,105,339	1,184,722
London:					
Agricultural Savings	133,798	301,479	216,853	303,557	238,922
Canadian Savings	185,487	242,036	190,843	300,418	229,696
Dominion Savings	990,823	276,468	391,896	458,215	529,350
Empire Loan	68,369	69,694	53,844	81,092	68,250
Huron and Erie Loan	737,013	937,176	736,594	540,713	737,874
London Loan	200,470	290,526	200,895	218,814	227,654
†Ontario Investment Association	5,002	6,099	42,496	412,346	116,486
Ontario Loan	458,585	588,325	619,880	618,381	571,293
Royal Standard Loan	44,472	52,106	23,670	71,466	47,928
St. Thomas:					
Elgin Loan	30,124	123,682	19,701	68,283	60,447
Southern Loan	42,942	101,977	83,532	94,062	80,628
Southwestern Farmers' Loan	15,957	56,219	36,767	48,638	39,395
Star Loan	65,314	46,299	44,924	65,513	55,520
Hamilton:					
Hamilton Provident and Loan	621,370	624,215	751,309	816,136	703,265
Hamilton Homestead Loan	14,814	10,718	17,032	23,584	16,537
Landed Banking and Loan	258,147	371,033	341,688	324,486	323,851
Kingston:					
Frontenac Loan	52,039	70,080	70,772	56,076	62,242
Ontario Building	31,703	64,173	135,367	138,130	92,343
Sarnia:					
Huron and Lambton Loan	142,677	156,072	94,386	131,657	131,198
Lambton Loan	203,750	213,918	212,760	265,744	224,043
Other places:					
Hastings Loan ..... Belleville.	72,004	26,140	40,571	71,312	52,507
Royal Loan ..... Brantford.	154,666	203,467	214,873	200,638	193,411
Chatham Loan ..... Chatham.	48,743	94,627	47,544	74,257	66,293
Huron and Bruce ..... Goderich.	46,415	29,854	34,024	57,054	41,837
Guelph and Ontario ..... Guelph.	248,962	287,584	316,010	337,054	297,402
Orangeville Building ..... Orangeville.	2,388	93	6,477	705	2,416
Ontario Loan ..... Oshawa.	98,561	102,045	88,895	114,518	101,005
Metropolitan Loan ..... Ottawa.	50,408	47,061	57,777	34,364	47,402
Central Canada ..... Peterborough.	741,276	1,684,371	713,401	317,401	864,112
Crown Savings ..... Petrolea.	47,565	51,605	24,231	18,005	35,352
Midland Loan ..... Port Hope.	180,519	202,514	153,444	171,591	177,017
Security Loan ..... St. Catharines	135,937	134,761	149,603	190,876	152,794
British Mortgage ..... Stratford.	157,449	223,988	127,811	253,495	190,686
Oxford Permanent ..... Woodstock.	29,497	45,278	14,938	72,789	40,626
Total for 54 Companies	17,263,028	20,391,348	17,048,536	17,160,053	17,965,741

* No loans stated in returns, but mortgages are given for balances due on lands purchased.
† In liquidation.

PART V.

CHATTEL MORTGAGES.

Section 7 of Chapter 12, 53 Victoria, Statutes of the Province of Ontario, being an Act respecting certain statistical returns, provides as follows:

1. Every clerk with whom instruments are required to be registered under the provisions of the Act respecting mortgages and sales of personal property shall on or before the 15th day of January in each year transmit to the Minister of Agriculture returns which shall set out:

(*a*) The number of chattel mortgages and renewals, the number of discharges and the number o assignments for the benefit of creditors on record and undischarged in the office of such clerk on the first day of January, in the year preceding that in which the return is made.

(*b*) The number of chattel mortgages and renewals, the number of discharges and the number of assignments for the benefit of creditors registered in such office during the year following said 1st day of January, and

(*c*) The number of chattel mortgages and renewals, the number of discharges and the number of assignments for the benefit of creditors on record and undischarged in said office on the 31st day of December in said year.

2. The returns shall not include instruments which have lapsed by reason of non-renewal.

3. The chattel mortgages and renewals and discharges and assignments for the benefit of creditors in the said returns shall be classified according to the several occupations or callings of the vendors or mortgagors or assignors, as stated in the instruments, and shall show the aggregate sums purporting to be secured thereby respectively.

4. The returns shall, where practicable, distinguish mortgages to secure future indorsations or future advances from mortgages to secure an existing debt or present advance.

In accordance with the foregoing statute, schedules were prepared and transmitted to the County Court Clerks. Returns have been received from them all, but very few were complete as to the discharges and assignments. The chattel mortgages and renewals have been tabulated by counties and by occupations, showing the total number and amount on record and undischarged at the beginning and end of the year 1890. The actual amount unpaid must be less in each case by the sums paid on the loans during the balance of the year following the registration of the instruments. This is partially off set by unpaid mortgages which have lapsed by reason of non-renewal. The amount of these is not determinable, but must necessarily be small. The difference, however, between the amounts on record at the beginning and end of the year practically shows the increase during the year. It must be borne in mind that the statement refers to chattel mortgages only. In Part IV we found that the regular loan companies hold $95,245,657 secured by mortgages on real estate, only a small fraction of which is loaned outside of Ontario. There are also a considerable number of real estate mortgages held by private individuals.

It is the chattel mortgage which indicates hard times, because it is the borrower's last resort, while in the many of real estate mortgages we may see signs of prosperity.

There is a want of uniformity in giving the occupation of the mortgagor by persons preparing the instruments. Farmers making small loans were put down as laborers in the county of Kent, but this was rectified during the year on suggestion of the clerk, as shown in Table II. There is nothing to indicate whether a carpenter, for instance, is an employer or employé. In one county we may have builders, while in others similar men are

termed carpenters. Lumbermen in Simcoe are evidently entered as manufacturers, for not a single lumberman appears on the schedule from that county, while on December 31, there were 45 manufacturers on record to the amount of $130,808. It has not been considered advisable, therefore, to present all the occupations in detail by counties, but a few of the leading ones have been singled out and so tabulated. Farmers forming the largest class of the community appear oftener than any other class in every county, with exception of Carleton, which embraces Ottawa, the seat of the Federal Government, with its numerous clerical staff. In this county mortgages against clerks were most numerous, there being on record on December 31, 136 for $50,259, out of 210 for $72,979 in the province.

The following summary table shows by groups of counties the chattel mortgages registered against farmers and all classes :

Districts.	Chattel mortgages on record January 1, 1890.				Chattel mortgages on record December 31, 1890.			
	Farmers.		All classes.		Farmers.		All classes.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		$		$		$		$
Lake Erie	1,108	261,788	2,087	696,471	1,642	428,166	2,581	923,602
Lake Huron	1,097	269,245	1,503	414,642	1,429	397,627	1,872	618,978
Georgian Bay	1,474	283,348	1,932	569,414	1,481	357,255	1,919	694,746
West Midland	1,250	464,283	2,324	1,095,364	1,434	528,131	2,463	1,201,424
Lake Ontario	1,564	732,676	4,084	2,539,027	1,666	729,368	4,306	2,280,734
St. Lawrence & Ottawa	1,090	278,182	2,218	1,120,099	1,376	352,903	2,475	1,067,231
East Midland	992	313,196	1,470	679,519	1,123	355,005	1,576	736,420
Northern Districts	302	49,840	596	377,372	378	59,836	667	1,426,308
The Province	8,877	2,647,558	16,214	7,491,908	10,529	3,218,291	17,859	8,949,443

The groups are the same as the districts into which the Province was divided for agricultural purposes in Parts I, II and III, as follows :

LAKE ERIE.—Essex, Kent, Elgin, Norfolk, Haldimand and Welland.
LAKE HURON.—Lambton, Huron and Bruce.
GEORGIAN BAY.—Grey and Simcoe.
WEST MIDLAND.—Middlesex, Oxford, Brant, Perth, Wellington, Waterloo and Dufferin.
LAKE ONTARIO.—Lincoln, Wentworth, Halton, Peel, York, Ontario, Durham, Northumberland and Prince Edward.
ST. LAWRENCE AND OTTAWA.—Lennox and Addington, Frontenac, Leeds and Grenville, Dundas, Stormont and Glengarry, Prescott and Russell, Carleton, Renfrew and Lanark.
EAST MIDLAND.—Victoria, Peterborough, Haliburton and Hastings.
NORTHERN DISTRICTS.—Muskoka, Parry Sound, Nipissing, Algoma, Manitoulin, Thunder Bay and Rainy River.

It will be seen that the total amount outstanding in chattel mortgages on December 31 was $8,949,443, of which $3,218,291 was held against farmers. Both the largest number and amount are to be found in the Lake Ontario districts. In this group are situate the cities of St. Catharines Hamilton and Toronto. There was an increase of 1,645 in the total number of mortgages during the year. Those designated farmers increased by 1,652, leaving a net decrease of 7 for all other classes. The amount against farmers increased by $570,733, and all classes by $1,457,535. Lumbermen, chiefly in the Northern Districts, show an increase of $1,159,873.

The average mortgage on the farmer, who borrowed on his chattels, was $298 on January 1, and $306 on December 31, as compared with $660 and $782 respectively for all other occupations.

CHATTEL MORTGAGES—ALL OCCUPATIONS.

TABLE I. Showing by County Municipalities of Ontario the total number and amount of Chattel Mortgages and Renewals on record and undischarged on January 1 and December 31, 1890.

Counties.	Chattel mortgages on record January 1, 1890.				Chattel mortgages on record December 31, 1890.			
	To secure existing debt.		For future indorsation.		To secure existing debt.		For future indorsation.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		$		$		$		$
*Algoma and Nipissing	303	180,574	4	1,973	317	727,398	8	414,786
Brant	134	105,635	....	.....	404	170,872	23	7,656
Bruce	802	210,564	3	6,535	877	286,698	13	5,299
Carleton	625	439,555	7	5,596	587	362,310	9	28,447
Dufferin	187	58,269	20	3,440	194	65,330	19	9,311
Elgin	411	155,093	13	5,769	387	124,206	34	8,884
Essex	117	50,613	9	10,623	540	168,639	....	.....
Frontenac	92	47,987	....	.....	341	126,729	....	.....
Grey	1,218	268,873	....	.....	1,130	314,759	....	.....
Haldimand	160	49,946	....	.....	196	57,443	1	250
Haliburton	81	20,165	1	5,000	95	74,576	....	.....
Halton	130	47,562	1	250	136	56,017	....	.....
Hastings	827	260,197	40	19,521	775	232,731	48	20,598
Huron	428	74,924	150	73,834	467	148,987	111	48,809
Kent	870	178,388	25	23,499	877	310,326	29	18,257
Lambton	105	44,451	15	4,334	363	117,879	41	11,306
Lanark	231	105,859	....	.....	196	67,314	1	3,906
Leeds and Grenville	300	90,321	5	22,665	347	132,883	13	5,698
Lennox and Addington	211	77,938	6	8,051	195	80,857	5	4,120
Lincoln	287	170,188	14	12,963	276	188,333	9	2,956
Middlesex	770	340,589	....	.....	549	284,367	1	3,000
Muskoka and Parry Sound	281	182,133	8	12,692	340	252,904	2	31,220
Norfolk	217	57,452	13	8,895	232	57,106	10	1,941
Northumberland and Durham	694	384,091	47	59,588	697	355,896	43	18,716
Ontario	392	159,450	28	21,896	435	164,275	35	15,608
Oxford	327	129,351	2	13,200	309	135,725	2	38,000
Peel	135	110,972	6	4,685	159	137,257	1	202
Perth	267	134,633	16	8,701	305	143,292	14	8,061
Peterborough	155	101,060	4	2,607	286	166,264	20	7,296
Prescott and Russell	192	72,000	....	.....	232	77,849	....	.....
Prince Edward	262	114,822	13	4,635	287	81,817	5	1,964
Renfrew	227	127,903	7	9,586	253	86,926	3	3,704
Simcoe	714	300,541	....	.....	789	379,987	....	.....
Stormont, Dundas and Glengarry	298	104,549	17	8,089	289	82,438	4	4,050
Victoria	361	258,969	1	12,000	349	231,655	3	3,300
Waterloo	71	45,566	3	6,203	131	74,499	5	28,110
Welland	231	146,441	21	9,752	259	146,803	16	29,747
Wellington	479	215,449	48	34,328	469	209,686	38	23,515
Wentworth	470	380,618	20	38,103	455	303,932	22	19,410
York	1,567	970,146	18	59,058	1,746	934,351	....	.....
The Province	15,629	6,973,837	585	518,071	17,271	8,121,316	588	828,127

* Including Manitoulin, Thunder Bay and Rainy River.

CHATTEL MORTGAGES—FARMERS AND LABORERS.

TABLE II. Showing by County Municipalities of Ontario the number and amount of Chattel Mortgages and Renewals registered against Farmers and Laborers, on record and undischarged on January 1 and December 31, 1890.

Counties.	Farmers.				Laborers.			
	Jan. 1, 1890.		Dec. 31, 1890.		Jan. 1, 1890.		Dec. 31, 1890.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		$		$		$		$
Algoma and Nipissing	119	19,390	147	24,764	12	2,632	8	955
Brant	65	34,595	238	71,368	1	200	8	543
Bruce	611	142,101	693	171,287	8	637	7	2,025
Carleton	97	17,000	120	31,905	6	650	9	900
Dufferin	158	39,620	151	40,736	....	.....	4	550
Elgin	203	50,877	240	62,893	11	816	7	633
Essex	73	16,794	345	77,572	5	546	46	4,531
Frontenac	59	28,641	250	81,906	1	300	6	628
Grey	977	152,834	921	187,520	11	979	9	1,037
Haldimand	99	26,830	119	31,036	7	2,017	4	695
Haliburton	73	12,662	83	9,719	....	.....	....	.....
Halton	60	19,262	68	26,223	6	420	5	715
Hastings	567	153,850	589	160,585	28	1,803	26	1,612
Huron	417	107,929	455	159,214	8	560	7	690
Kent	482	92,609	637	189,879	238	12,625	52	3,890
Lambton	69	19,215	281	67,126	....	.....	5	623
Lanark	128	35,374	127	42,258	6	263	2	150
Leeds and Grenville	187	37,458	234	53,892	6	704	9	431
Lennox and Addington	118	31,731	112	30,801	3	218	2	99
Lincoln	114	37,514	110	54,937	6	392	2	228
Middlesex	314	103,743	316	121,328	12	862	11	977
Muskoka and Parry Sound	183	30,450	231	35,072	7	392	4	797
Norfolk	150	33,077	164	34,713	4	377	6	440
Northumberland and Durham	478	279,029	490	238,972	21	2,256	14	2,143
Ontario	264	93,363	351	113,755	13	1,512	13	2,953
Oxford	186	76,488	162	77,413	12	964	20	2,816
Peel	84	87,178	93	109,165	5	413	5	410
Perth	167	75,672	196	76,085	4	350	2	[illegible]
Peterborough	100	40,318	194	70,648	1	47	3	[illegible]
Prescott and Russell	165	46,405	170	33,355	1	60	9	[illegible]
Prince Edward	231	94,119	244	59,826	7	710	7	[illegible]
Renfrew	161	40,240	184	40,493	3	739	5	899
Simcoe	497	130,514	560	169,735	49	6,043	25	3,259
Stormont, Dundas and Glengarry	175	36,333	179	38,293	17	1,344	18	1,874
Victoria	252	106,366	257	114,053	3	211	3	342
Waterloo	27	16,476	54	28,194	3	278	3	579
Welland	101	41,601	137	42,073	20	1,542	7	477
Wellington	333	117,689	317	113,007	6	494	3	309
Wentworth	92	38,699	97	39,467	....	.....	7	909
York	241	83,512	233	87,023	20	2,423	31	2,713
The Province	8,877	2,647,558	10,529	3,218,291	571	46,759	414	43,909

CHATTEL MORTGAGES—HOTEL-KEEPERS AND MERCHANTS.

TABLE III. Showing by County Municipalities of Ontario the number and amount of Chattel Mortgages and Renewals registered against Hotel-keepers and Merchants, on record and undischarged on Jan. 1 and Dec. 31, 1890.

Counties.	Hotels and liquor shops.				Merchants.			
	Jan. 1, 1890.		Dec. 31, 1890.		Jan. 1, 1890		Dec. 31, 1890.	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
		$		$		$		$
Algoma and Nipissing	13	9,569	17	9,957	21	45,419	22	56,579
Brant	2	278	12	9,376	5	29,380	14	31,523
Bruce	13	4,588	16	9,396	14	14,661	4	5,136
Carleton	30	16,976	22	58,634	60	143,521	46	100,576
Dufferin	5	4,800	6	6,371	4	1,743	4	6,551
Elgin	17	10,862	10	3,983	17	11,216	6	2,061
Essex	6	6,575	12	6,977	7	10,763	21	14,960
Frontenac	1	1,612	4	2,039	2	2,293	7	6,189
Grey	14	5,612	11	4,667	14	32,135	11	28,145
Haldimand	3	987	1	1,000	5	5,377	10	3,966
Haliburton	2	534	4	877	1	194	2	397
Halton	5	4,240	4	4,633	5	5,062	1	3,144
Hastings	17	7,416	11	5,786	29	21,076	30	11,693
Huron	8	2,005	5	3,541	9	5,040	6	1,365
Kent	12	4,875	15	13,677	33	27,598	8	9,644
Lambton	3	1,921	17	10,999	4	3,297	2	1,558
Lanark	8	5,754	6	6,907	7	7,309	7	3,265
Leeds and Grenville	8	11,209	8	8,420	9	2,213	13	25,858
Lennox and Addington	9	8,457	6	7,198	5	14,699	3	4,850
Lincoln	13	6,333	15	13,630	20	30,949	24	40,747
Middlesex	18	11,215	15	17,237	15	11,915	10	5,057
Muskoka and Parry Sound	10	5,381	8	4,476	13	24,453	10	39,213
Norfolk	8	3,464	10	4,430	7	3,028	3	3,426
Northumberland and Durham	14	11,272	8	4,561	16	16,982	11	10,343
Ontario	9	4,149	8	3,311	6	7,908	7	8,043
Oxford	5	2,957	5	4,974	6	9,093	8	8,963
Peel	7	3,572	4	3,746	..	.....	3	3,566
Perth	11	9,636	9	10,116	8	19,415	5	9,123
Peterborough	2	313	6	4,108	3	1,339	7	2,779
Prescott and Russell	12	4,689	11	5,588	6	4,980	13	16,678
Prince Edward	3	6,900	4	6,634	9	9,754	11	9,374
Renfrew	6	2,091	5	1,750	8	20,444	14	22,027
Simcoe	18	9,306	24	23,471	32	58,949	30	15,583
Stormont, Dundas and Glengarry	12	32,024	4	12,800	11	9,504	8	5,762
Victoria	6	4,039	7	3,828	12	11,494	6	4,400
Waterloo	7	4,874	3	9,768	4	6,612	9	11,438
Welland	18	8,761	20	8,144	18	26,686	13	33,672
Wellington	20	22,725	24	26,199	6	7,748	12	17,549
Wentworth	83	75,064	86	84,027	31	27,000	28	28,448
York	60	67,086	80	89,932	93	118,703	102	168,797
The Province	518	403,921	543	517,168	575	809,952	551	777,448

CHATTEL MORTGAGES—BY OCCUPATIONS.

TABLE IV. Showing by occupations or callings of mortgagors the number and amount of Chattel Mortgages and Renewals on record and undischarged on January 1 and December 31, 1890, respectively in the province of Ontario.

Occupations.	Chattel mortgages on record Jan. 1, 1890.				Chattel mortgages on record Dec. 31, 1890.			
	To secure existing debt.		For future indorsation.		To secure existing debt.		For future indorsation.	
	No.	Amount.	No.	Amount	No.	Amount.	No.	Amount
		$		$		$		$
Agent	196	50,688	5	10,223	237	73,263	6	4,672
Bailiff	20	7,582	2	483	12	1,915	....	.....
Baker and confectioner	97	29,664	1	100	92	31,016	2	500
Barber	51	13,158	2	357	65	16,494	5	752
Barrister and solicitor	67	45,828	4	4,362	50	62,775	3	2,677
Billiard room	9	3,977	....	.....	20	9,160	....	.....
Blacksmith	89	21,275	1	150	86	15,794	5	810
Boarding-house	28	5,459	....	.....	15	2,764	....	.....
Book-keeper and accountant	47	31,928	....	...	48	29,478	....	.....
Brickmaker	39	26,755	3	1,500	43	25,221	2	365
Builder and contractor	129	82,528	3	1,034	101	43,681	3	1,412
Butcher	165	42,623	4	1,275	155	43,083	5	1,270
Cabinet maker	27	8,664	2	104	20	13,628	4	1,849
Cabmen	73	21,985	....	.... ..	52	15,591	....	.....
Carpenter	139	22,982	4	259	157	32,005	3	280
Carriage maker	52	17,504	2	721	48	38,155	1	116
Carter	36	9,533	2	155	22	3,609	1	15
Clergyman	36	8,591	1	210	23	5,062	....	.....
Clerk	217	77,357	....	.....	210	72,979	....	.....
Coal and wood dealer	10	9,265	....	.....	15	6,781	1	550
Cooper	7	1,275	1	80	10	2,391	....	.....
Dairyman	35	11,395	1	1,188	38	17,098	2	541
Druggist	46	59,262	2	2,137	60	63,147	....	.....
Engineer	12	2,445	....	.....	14	2,020	....	.....
Farmer	8,542	2,493,059	335	153,899	10,163	3,090,664	366	127,627
Furniture dealer	14	3,889	....	.....	9	3,308	....	.....
Gardener	65	12,716	....	.. ..	46	7,074	3	250
Gentleman	237	169,660	3	600	221	134,872	9	5,784
Harness maker	35	9,158	....	.....	36	8,577	1	100
Hotel and liquor shop	502	392,798	16	11,123	536	510,911	7	6,257
Jeweller and watchmaker	61	81,810	3	2,100	61	59,022	2	2,564
Laborer	562	46,024	9	735	409	43,359	5	550
Laundryman	8	1,984	....	.....	12	4,960	2	1,000
Livery keeper	151	100,900	4	4,448	139	86,133	3	2,242
Lumberman	102	362,050	10	33,039	128	1,096,697	7	458,265
Machinist	36	21,507	....	.....	55	35,025	....	.....
Manufacturer	210	454,194	25	80,547	257	408,733	13	48,957
Marble dealer	12	2,347	3	261	5	922	1	80
Married woman	331	89,713	9	2,235	317	108,557	6	2,465
Merchant	531	734,526	44	75,426	519	701,111	32	76,337
Miller	46	38,336	3	3,095	53	38,999	5	4,215
Moulder	13	2,182	....	.....	12	2,358	1	108
Painter	63	11,650	1	1,135	51	8,550	....	.....
Photographer	33	7,154	....	.....	35	10,940	1	100
Physician	66	38,658	2	166	56	26,568	1	880
Plasterer	11	1,561	1	250	21	3,124	1	249
Plumber	11	3,673	....	.....	12	5,023	....	.....
Printer and publisher	155	143,754	3	4,490	188	180,063	3	1,811
Salesman	7	1,663	....	.....	16	2,883	1	750
Saw-mill man	41	20,188	2	2,500	43	22,439	4	3,150
Shoemaker	45	13,099	3	3,101	43	14,314	....	.....
Tailor	62	26,956	3	624	62	21,707	1	3,000
Teamster	219	32,693	2	375	293	43,879	7	3,910
Tinsmith	23	9,959	....	.....	22	9,237	....	.. ..
Traveller	43	13,131	....	.....	42	13,244	....	.. ..
Undertaker	22	16,343	1	300	35	16,707	1	300
Unmarried woman	47	12,200	2	502	61	14,189	1	153
Widow	120	40,924	3	1,274	137	44,986	5	1,256
All others	1,576	951,655	58	111,508	1,603	715,071	56	59,958
Total	15,629	6,973,837	585	518,071	17,271	8,121,316	588	828,127

FIRST ANNUAL REPORT

OF THE

INSPECTOR OF MINES

FOR THE

PROVINCE OF ONTARIO

1890

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY

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1891.

INSPECTION OF MINES.

To His Honor Sir Alexander Campbell,
Lieutenant-Governor of Ontario :

Sir,—I have the honor to present herewith the first Annual Report of the Inspector of Mines, an officer appointed under the Act respecting Mining Regulations, Chapter 10, 53 Victoria.

I have the honor to be,
Sir,
Your Obedient Servant,

JNO. DRYDEN,
Minister of Agriculture.

REPORT OF THE

INSPECTOR OF MINES.

To the Honorable JOHN DRYDEN,
Minister of Agriculture:

SIR,—I have the honor to submit to you herewith my report on the inspection of mines for that part of the year since my appointment in April up to December 31st, 1890.

But little more could be accomplished in this first year of service than to take a general survey of the field on which work was to be done.

The area over which minerals are found in the province is widely extended, stretching from east to west a distance of nearly 1,200 miles, and from north to south 800 miles. The following economic minerals, distributed over this wide space, have been discovered, viz.: Iron, silver, gold, copper, nickel, lead, bismuth, antimony, cobalt, molybdenum, arsenic, manganese, mica, tellurium, zinc, actinolite, asbestos, graphite, gypsum, phosphate of lime, shell marl, kaolin and salt. Precious stones: as amathyst, garnet, beryl and zircon. Building material: as granite, sandstone, limestone, dolomite, flagging stone, roofing slate, clays, serpentine and marble. Combustibles: as peat, petroleum and natural gas.

Invaluable aid has been obtained by a careful examination of the elaborate and exhaustive report of the Royal Commission appointed by the Ontario Government in May, 1888, for inquiring into and reporting upon the mineral resources of the province and the measures for their development.

The report of the Commissioners was published in the early part of 1890, and it brought up their investigations to the end of the year of their appointment, and the geological and some other branches to a later date. This publication has placed the mineral resources of the province in a fair and conspicuous manner before the public, and made the work of the inspector comparatively easy for this initial year. The high commendations given by the press to the Commissioners for their work have been justly merited. It opened a new era to our province by directing the eye of the world to her vast mineral wealth.

Besides personally visiting the principal mines which are now being worked, some time has been spent by me in exchanging views with a number of intelligent gentlemen who are interested in the mineral industry of the province as to the best methods of operating the mines and the proper treatment of their products.

The recent legislation in the passage of the Mining Regulations Act, which came into force on the 1st of July, 1890, has met with general approval by mining men so far as its provisions have been understood. Its existence is of so recent date that many of the proprietors as well as the managers of mines have not yet had the opportunity of examining it. I have distributed copies of the Act to the most if not to all of the managers of the mines. In a number of the largest mines its provisions for the proper protection of the workmen had already been adopted.

GOLD.

Some new gold discoveries have been made and considerable prospecting work done with encouraging results and a few of the older properties have been worked to a limited extent.

Lake of the Woods. An account has been given to me of the condition of the mines in the region of Rat Portage by Mr. William Rapsey of Port Arthur, a mining captain who had just returned in July from an engagement in opening up a new discovery on X 90, about 14 miles south-east from the town. On this new property a shaft was sunk 20 feet, and four other openings were made along the surface for 700 feet, following the vein. The quartz rock was well mineralized with iron pyrites carrying gold. The property is owned by C. S. Morris of Toronto.

About a mile from this property is the Winnipeg Consolidated mine, on which a considerable amount of capital has been expended in developing the mine and erecting a stamp-mill. The mill and machinery have been removed and the shaft was filled with water. Recently this property has changed hands and work recommenced by pumping out the water and drifting in the bottom of the 108 feet shaft with encouraging prospects. The formation is calcite and slate. The Pine Portage mine is lying idle, a description of which is given in the Commission's report, p. 116.

The Sultana mine, on Sultana island, has been worked to a limited extent. Three shifts, of three men each, with a few men outside, have been working since May, and they have opened a new shaft, 8 by 10 feet, to a depth of 50 feet. This development work was being done for parties in England with a view to the purchase of the property.

About three miles east from Rat Portage, and near the Canadian Pacific Railway, is the Ashweiler mine, which has been worked with a force of ten men since early in the season and with good showing of rich mineral, but no assays had been made.

Galbraith. My attention was directed to a new find north of Bruce Mines, and being unable to reach the locality at that time I requested Dr. Bell of the Geological Survey of Ottawa (whom I had the pleasure of meeting at Sudbury) to favor me with a description of the discovery, as he would soon visit that region. He writes under date August 13th, 1890, as follows:

"Replying to your request for information about the gold discoveries behind Bruce Mines, and the work which is being done there, I would say that the gold discovery is situated on lot 12, range 3, township of Galbraith, about 15 miles northward of Bruce Mines. The gold is found free and also in sulphides, disseminated through a vein of quartz which has a width of 30 feet where it was opened. It is traceable for some 300 feet to the eastward on the surface, but is covered to the westward. It has a west-north-westerly course and underlies to the southward at an angle of 45°. Very little work has been done.

"Messrs. Blackwell and Mitchell are trying to find a continuation of this vein on lot 1, range 3, in Coffin, adjoining it, by sinking through the surface deposits. They had been employing 22 men, but at the day of my visit in the beginning of the present month there were about 15 at work owing to haying. They had sunk shafts through the clay and till to depths of 30, 50 and 80 feet respectively, and were tunnelling both north and south from the bottom of the 80 feet shaft on top of the bed rock, also driving from the sidehill southward in another place near by.

"There had been a little prospecting in this region during the summer, but none was going on at the time of my visit, and I could hear of no other discoveries having been made."

Marmora. I was shown on lot 30, in the 3rd concession of Marmora, an extensive lead of what was regarded as gold-bearing quartz. It was traced for fully a third of a mile and of considerable width. Free gold, it was reported, had been discovered in several places. Should actual tests confirm the description given, the property will be one of great value.

Several gold mines in this region had been worked on a large scale in former years, but were idle at the time of my visit. See description in Mining Commission's report, pp. 106, 110, 111.

SILVER.

The principal silver mines which have been worked during the year are those west of Port Arthur.

Murillo. The Murillo mine is situated on the south half of lot 5 in the 2nd concession of Oliver township. The shaft, 8 by 9 feet, has been sunk to a depth of 96 feet, and is supplied with a drum for a hoist and a pump. The vein is about 6 feet wide at the bottom of the shaft, and is composed of calc and fluor spar with quartz. The mineral is argentiferous galena; the hanging and footwalls are diorite, but the deeper workings indicate black slate. The owners at the time of my visit had just brought on the ground a 60 h. p. boiler and a 9 inch pump. No shipment of ore had been made, but I was informed that the company intended at an early date to erect concentrating works on a stream near by, and to connect them with the mine by tramway. The mine is three-quarters of a mile from Murillo station, on the Canadian Pacific railway. The St. Joseph mine on the adjoining lot was not being worked.

Beaver. Former reports have been made of the Beaver mine. (See Mining Commission's report, p. 192, and Manager Hooper's report in the same, pp. 198 and 199). Since these reports were made, constant work has been carried on in the mine and some important changes have been made in the method of treating the ore. In July the main shaft had reached a depth of 550 feet, with an excellent showing of mineral. The drifts and stopes have also been largely extended, resulting in an enormous increase of the production of ore. The main drift on the line of what is known as the Beaver vein, which is about 8 feet wide, has been run for nearly 1,000 feet, and has been cut by a cross vein of 50 feet in width, neither vein being disturbed in its course. The work is well arranged in the mine, and the best of implements are in use to secure not only rapid but economic results, while due care is had for the safety of the workmen. The use of a 75 h.p. compressor for the work in the mine, with the present openings, makes the ventilation complete. A large quantity of ore was in sight, convenient for stoping, but it was being taken out only in quantities sufficient to supply the mill. The high grade is sorted out for shipping. When lifted from the mine the ore is dumped into cars and conveyed over a down grade tramway from the mouth of the adit to the stamp mill, a distance of 3,800 feet. The mill is a Gates, and was built four years ago. The rock goes through a Blake crusher, then through the two batteries of five heads each of Fraser and Chalmers patent stamps, each head weighing 850 pounds. The ore goes from the rock mill to the four Frue vanners, and thence to the three Hooper vanners, which were invented and placed in position by the inventor himself, and which are now used in lieu of the mullers charged with quicksilver and the grinders. The introduction of the new vanners with their slow motion makes practicable the treatment of low grade ore of but 11 ounces per ton from the old dump with success. The admixture of a higher grade ore taken from the mine with the low grade from the dump secures by this new process of treatment the average standards of concentrates for shipping, while the loss of silver is reduced to a minimum, or not to exceed two per cent. The old dump, which contains thousands of tons, was thrown out as non-paying, but is now being treated with a liberal profit. It is a matter of surprise that a work of such magnitude should be conducted with so little manual labor, both in the mine and in the mill. Only three men are required to run the mill, and but a small force is used in the mine. A larger number are employed for outside work, such as cutting and hauling wood and logs to the saw-mill and hauling ore and concentrates to the railway and supplies back. Five cords of wood are consumed and twenty-five tons of ore are treated in the mill every twenty-four hours. The unlimited quantity of ore, with the improved method of its treatment and the economic management, combine to make this property one of great value. I was informed that the shipments of ore and concentrates brought satisfactory returns. The mine is situated on 97 T and the Company owns an area of 3,000 acres, a part of which has been cleared for wood and is now placed on the market at $2 per acre, the minerals being reserved. Mr. Hooper stated that the new railway would cut off one-half of the teaming, and also would

be a means of conveying future supplies of wood, which will soon become an important factor in mining, as at least 400 acres are cleared annually to supply the requirements of the district. If a waggon road were built, it would bring the mine within two and one-half miles of the railway, with a grade not to exceed 300 feet per mile. He also stated that a macadamized road could be constructed to the railway station on an easy grade of five and one-half miles distance, provided a small government grant was made, and the road would be available for the Rabbit, Beaver, Badger, Porcupine, Elgin and Pig mines. Its construction is certainly desirable. Beside the complete outfit of buildings for the mine and the mill other accommodations are provided, such as residences for the workmen, a hotel, store, post-office, school-room and a hall for religious service. A daily stage with the mail reaches the place.

Badger. On pp. 193, 199 and 200 of the Mining Commission's report a description of the Badger mine is given, with a diagram of the workings. Mr. Herbert Shear had been in charge of the works then for three months, and he is still the manager. The property consists of 200 acres, parts of locations 200 T and 201 T in Gillies. The company was organised in April, 1887, with a capital stock of $250,000, and like the Beaver is owned by Americans. Work has been constantly carried on and the force increased up to 110 men, 80 of whom were engaged on underground work in July. The old drifts, respectively 450 and 500 feet, have been carried on with a large extent of stoping. A new drift on a new vein of ore at a dip of 60° north-east and 3 feet wide was being run in. The ore is high grade and a large quantity of it was being taken out. Satisfactory shipments of ore, which is first sorted and put in barrels, have been made. The reduction works have been completed and are in active operation. There is an atmospheric stamp of 25 tons capacity and one battery of 5-head stamps, 4 Frue vanners and the other necessary outfit for the mill. The mill engine is 100 h.p. and the hoisting engine 60 h.p. Comfortable houses are erected for the workmen, and there is a good laboratory, with Mr. Simmons as assayist. I was notified by Mr. Shear, the manager, of an accident by explosion at this mine on the 27th of October last, when John Kifini, a native of Finland, was killed and Edward Hani slightly injured. The explosion was evidently that of a "missed hole" which was being drawn by the deceased.

Porcupine. The Porcupine mine is also under the management of Mr. Shear. It was transferred to the Badger company in May last, and a large amount of work had been done on it before it changed ownership. On the north side is a shaft of 65 feet in depth and on the south side three drifts have been run in, the first 216 feet and the second 210 feet, and the third not so far. The first and second drifts are to be connected by a winze. In July a working force of ten or twelve men was engaged by contract in running a drift on a vein of about three feet in width, and some good ore had been sorted from the vein matter. It was intended at an early date to put on a stronger working force, and to erect an engine hoist and a Studivant fan, which I learn has since been done with good results, as the mine has become a largely producing one. The milling ore is taken to the reduction works at the Badger mine for treatment.

Silver Glen. Silver Glen mine is three miles from Whitefish lake, and is on 230 K. It is owned by Thomas Ledret and Peter Geroux, and is now controlled by a French company with a capital of £60,000. The vein is about five and one-half feet wide. Two shafts have been sunk, one 19 feet and the other 27 feet deep. This deposit was located over four years ago by tracing the vein from the Silver Fox location, a distance of three miles. Ore taken from the dump and assayed in Paris gave from 600 to 1,000 ounces per ton.

East Silver Mountain. It will be interesting to note the earlier account of East Silver Mountain mine as given in the evidence of Mr. T. H. Trethewey before the Mining Commission. (See p. 201 of the report). Captain S. Thompson is the present manager, and about fifty workmen are employed. The property comprises locations R 53 and R 54 in Lybster, covering an area of 1,158 acres. The company's head office is in Liverpool; the capital stock is $150,000, and over $100,000 has been expended on the workings of the mine. Extensive work has been done on this property. There are two

levels, the first of which is about 70 feet from the top of the mountain, and has been run in about 1,850feet. The second, which is below the surface about 120 feet, has reached the length of 700 feet. There are three shafts, one of which has reached the depth of 650 feet, another about 150 feet, and the third 100 feet. In some parts of the older workings operations were being carried on, while a part of the working staff were engaged in new openings. A new vein of ore 16 feet wide, of exceeding richness, had been discovered about 150 feet south from the main lead, where a drift of 25 feet had been run in at the time of my visit. On the north side another vein one foot wide was being worked. Both veins dip toward each other, and if continuous in their present course will meet at a depth of 700 feet. These new finds have determined the manager to continue prospecting on an extensive scale, while the work is still going on in the older parts of the mine. There is a good assay department in connection with the works. A considerable quantity of high grade ore has been shipped. Shaft-houses, blacksmith's shop, boarding-house, a suitable residence for the manager and sixteen dwellings for the miners have been erected; also a good school-house in which a school is kept open the year round.

West Silver Mountain. In July West Silver Mountain mine was worked by about 25 men under themanagement of Mr. Achille Falco, formerly of Colorado. The work has been carried on since June, 1888. The property is owned by the West End Mining Company of Ontario (limited), with Mr. H. N. Nichols, of Denver, Colorado, as president. The property is composed of 55, 56 and 57 R in the township of Lybster, 240 acres. Capital stock, $2,000,000. Three shafts were sunk, the deepest 200 feet, with about 70 feet of drifting. This shaft was nearly filled with water. Shaft No. 2 had reached a depth of 50 feet, with drift 250 feet, and a winze of 40 feet. A vein of 5 feet width contains native silver, argentite, zinc-blende and cobalt, with indications of asbestos; the gangue is calc and fluor spar, barytes and quartz. The assays of ore widely vary, from 15 up to 7,960 ounces per ton. The buildings consist of engine and hoist houses, dwelling for manager, with office attached, and eight houses for the workmen. The whole work was kept in a neat and substantial manner. Recently this property has changed ownership, and has been placed under the management of Mr. William Rapsey, of Port Arthur, a mining captain of large experience. Twenty-five men are still employed, part of whom are working on shaft No. 2, and a gang is engaged sinking a pit on a promising vein of ore at the east end of the location. A road has been cut out and graded to the new railway track.

Crown Point. Crown Point mine is on the east side of Silver Mountain, and comprises 165 acres, R 95 and R 118. This mine was not being worked when I visited it. Mr. W. N. Montgomery, the manager, informed me that it was expected a company would be formed soon and work would then be resumed. Silver was discovered by Mr. Montgomery over four years ago, and he has directed the work on it from its beginning. There are two drifts; one has been run in 120 feet, while the second follows a vein of the average width of two feet for the distance of 578 feet, with a cross-cut of considerable length. The ore is high grade and a quantity has been taken out. The gangue matter is calc spar, in which is found silver sulphurets and some iron pyrites. Some of the mispickle ore assayed 16½ ounces of silver and 1½ ounces of gold, while selected specimens ran as high as 644 ounces per ton. The timbering of the mine has been refitted lately and in the broken formation it has been replaced by new supports, so that the mine is in a safe condition to renew work.

The foregoing mines, and the Rabbit, Cariboo, Elgin, Y 1, Peerless, Silver Fox, Little Pig, Silver Creek, Big Harry and Big Bear, which are now lying idle, and numerous other deposits which have been discovered, together with the famous Silver Islet mine from which some $4,000,000 have been taken out (but is now filled with water) are all within the limits of the Animikie formation. Dr. Bell, of the Royal Commission, says in the geological part of the report: "The Animikie rocks are of great importance as being the silver-bearing formation of Ontario." As to the extent of the formation he also says that "geographically, the Animikie formation in Ontario occupies a triangular area of which the base, 60 miles in length, extends from the mouth of Pigeon river west-

ward along the international boundary to Gunflint lake, while one of the other sides is formed by the shore of lake Superior from Pigeon river to Goose Point on Thunder Bay, 40 miles in length, and the third side by a line joining this point and Gunflint lake, about 80 miles in length."

Some of the mines now lying idle have had extensive prospect work done on them with cheering results, and with the increased facilities by the construction of the new railway through this district, whereby supplies can easily be obtained and the products of the mine conveyed to market, we may reasonably anticipate that from these and other mines that may be opened immense treasures of wealth will be obtained from this part of the province in the near future.

COPPER AND NICKEL.

Several incidents of late have combined to draw special attention to Sudbury as an enormous nickel ore-bearing district.

In October last a section of the Iron and Steel Institute and their friends of the American Institute of Mining Engineers paid a visit to the copper and nickel mines of Sudbury which brought to their notice the fact, which they state, "that her nickel ore deposits were the greatest the world has ever seen." The cabled reports of Mr. Erastus Wiman's speech on the mineral resources of Canada, delivered at Niagara Falls on the occasion of the banquet which he gave to the members of the Iron and Steel Institute and other distinguished guests, have drawn forth from the English press the most remarkable comments. The Manchester Evening News says:

"If the Alladin-like story told by Mr. Wiman does not result in a flow of British capital to Canada it will be surprising. English investors have already become alive to the fact that a good and sure return for their money can be obtained in American industrial enterprises. But their capital could be still better applied to work the mineral and other resources of Canada. The stimulus thus given would result in an enormous influx of population. Should such a magnificent territory be neglected or allowed to be absorbed by the United States?"

The visit of Mr. Krupp of Germany, nephew of the greatest of gunmakers, to these mines to obtain an accurate and personal knowledge of the value of their ores and the tests made with alloys of nickel with steel have invited the attention of other nations besides the British and American to these rich deposits. The Birmingham Gazette of October 25th says:

"There is ample room for believing from the tests recently made by the naval experts of the United States that armor plates composed of steel and nickel are impenetrable. This discovery makes the newest of our armor-clad battle ships antiquated. Their massive plates of hardened steel must return to the furnace to be alloyed with nickel. The youngest of the 'Woolwich infants' must go with the oldest to the place whence they came in order that through a second fiery birth they may be blended with a mineral that will make them 'unburstable.' A gloomy prospect it is for the treasuries of the world already overtaxed to maintain their too costly armaments. Cheery prospect none the less for Canada, which, if expectation be realised, will have cause to look upon the region of Sudbury as a veritable El Dorado. Perhaps, too, Mr. Wiman is not without reason when he says that a contribution towards the peace of the world may thus be made by Canada. We need not, however, go deeply into the question of whether nickel plates will hasten the advent of the millennium. It is sufficient for the present to remark that the recent tests bid fair to give a remarkable stimulus to the commerce of the Dominion of Canada. It is no longer deemed a land fit only for wheat growers and cattle raisers. It is a land in which the boldest enterprises of commerce and civilization may be practised with profit and advantage."

At its last session the Congress of the United States appropriated one million dollars to be used in making nickel steel armor plate and ordnance, and before the expenditure of this large sum the Government appointed two Commissioners, Commodore Folger and Lieut. Buckingham, to investigate the sources of supply for the metal. After visiting

Sudbury mines in November last these gentlemen made a detailed report to their Government, which was prefaced by the following : "We are fully convinced from the surface indications and the shafts already sunk that they have an amount of mineral which cannot be exhausted by this generation." Their report closes with a summary in figures of surprising magnitude; they say the estimate of ore above the surface of the ground in the deposits seen by them reaches 650,000,000. tons. A writer in a recent issue of the Toronto Globe in commenting upon this enormous quantity of ore tells us that "it is an amount equal to five times all the iron that has been taken out of the rich mines of Lake Superior district (American side) in the whole forty years of their working. If this ore were raised and shipped it would give more than three times as much freight as all the railways of Canada have carried since the first locomotive began to run."

The exemption from duty of copper and nickel ores and matte as provided in the otherwise obnoxious McKinley Bill was made the occasion of drawing special attention to the mineral region of Sudbury as a source of supply for the American Government.

The judicious Order in Council recently passed by the Ontario Government in withholding the sale of mineral lands for the present in this district to avoid their being locked up in the hands of unoperative speculators has received general approval.

The recent trip of the Council of the Board of Trade of Toronto and others to the Sudbury mines, provided by the generosity of the managers of the Grand Trunk and Canadian Pacific railways, has also brought these immense treasures of wealth under the direct purview of a large number of our home capitalists.

There are six large producing mines in the immediate vicinity of Sudbury, viz: Copper-cliff, Evans, Stobie, Murray and Blezard, and the Worthington which is 25 miles out on the Sault Ste. Marie branch of the Canadian Pacific railway. Four smelters of large capacity are now being operated in connection with these mines.

Canadian Copper Co. The Copper-cliff, Evans and Stobie mines are owned and operated by the Canadian Copper Co., the pioneer company in the Sudbury region, and are worked on the largest scale at the present time. This company was organised January 5, 1886, and has a paid up capital stock of $2,000,000, and a total area of about 10,000 acres. Its management is in the hands of Mr. John Evans, a civil engineer and provincial land surveyor, who has had charge of the engineering department for the past five years and who assumed entire management in May last. Under his skilful supervision the work is conducted in a judicious and economic manner with a working force of about 300 men.

The Copper-cliff mine lies about three and a half miles south-west of Sudbury. In December, at the date of my last visit, the workings had reached a depth of 700 feet on an incline of 40°, with levels at a distance of 100 feet apart. From the extensive drifts, cross cuttings and stopes an immense quantity of ore has been removed, the daily output reaching 150 tons.

The utmost care is observed in placing the work underground in a secure and workmanlike shape. Good ventilation is secured through winzes, aided by the use of the air compressor drills. Since the accident which occurred some time ago, resulting in the death of three men who were ascending on the ore car when the cable parted, the order is strictly enforced for the workmen to go in and out of the mine on the ladders, which are conveniently arranged and substantially walled off from the ore hoisting shaft.

The ore is raised from the mine in a car. The larger lumps are broken and the ore passes into a large Blake crusher and is received into a rotary screen where it is separated into three sizes and falls into separate bins. From the bins it is dumped into cars and taken to the roast beds over an elevated railway track. The roast heaps, situated between the mine and the smelter, have been extended for fully half a mile in length and contain from 600 to 1,400 tons of ore. These huge heaps, about 130 feet long by 50 in width and piled up to the height of 10 to 14 feet, require from six to nine weeks in roasting to properly desulphurize the ore for treatment at the smelter.

Two smelters are used by the company, and treat about 150 tons each daily. For a particular description of the smelters and their outfit and the manipulation of the ore, see the Commissioners' Report pp. 378 and 475; also foot note on p. 381 by Mr. H. P. McIntosh of Cleveland.

The Evans mine is about one mile south-west of Copper-cliff. Extensive work has been carried on at this mine during the past year. In August the shaft had reached a depth of 200 feet from the elevation where the ore is dumped. The first level is 72 feet below the surface, and workings have been extended to connect with a surface opening outside of the ore and shaft house. Here an excavation was made of about 80 by 150 feet in a rich body of ore. In December this large working had been extended to about 200 feet in diameter with increased masses of ore exposed. A considerable quantity of ore had been stoped from the second level, 50 feet below the first, the shaft had been sunk to a greater depth and a third level was being worked. This mine has all the appliances in machinery and general outfit to work it efficiently, and the management has regard to both economy for the company and safety for the workmen. The ore passes through the process of sorting, crushing and screening, and then is conveyed over the railway to the roast heaps near the smelter.

The Stobie mine is situated four miles north-east of Sudbury. At the time of my visit in December it had been worked with a force of from 20 to 30 men for about two months previous, the work having been suspended for a length of time before. A quantity of ore had been taken from the hill-side into which a wide opening has been made. The adit is extended for a considerable distance on the deposit. The ore is not of the highest grade, but on account of its enormous quantity it is estimated as one of the richest properties of the company.

This company has other fine deposits which have not yet been largely developed. A very large quantity of matte was on hand at the smelter, and thousands of tons of ore were in process of roasting or ready for treatment. Ample accommodation is provided in convenient residences for the workmen with all suitable buildings for carrying on the extensive operations of the Company. There is also a good laboratory.

H. H. Vivian Co. The Murray mine property is owned by the H. H. Vivian Company of Swansea and London, and is situated on the main line of the C. P. R., 3½ miles west of Sudbury. It commenced mining operations at this mine in October, 1889, under the management of Mr. Alfred Murray, who resigned his position in June, 1890, and was succeeded by Mr. F. R. W. Daw, who was educated at the Royal School of Mines at South Kensington, England, and is a mining engineer for Sir H. Hussey Vivian, Bart. M.P. Under the former management the work was chiefly confined to prospecting. Since Mr. Daw assumed the management of the work the directors of the company have decided to lay open the mine on an extensive scale and to carry on operations systematically. At the time of my visit, August 6, the workings of the mine consisted of a shaft, known as the Vivian shaft, sunk to the depth of 60 feet, from which levels have been extended north-east about 90 feet and south-west about 60 feet. Stopings are being worked in these levels from which considerable quantities of ore have been taken out. The percentage of ore from these workings is as follows, iron about 35 per cent., sulphur 23 per cent., nickel 2 per cent., and matrix 40 per cent. In addition to the underground workings, extensive surface workings are being carried on in two places east of the Vivian shaft from which about 2,000 tons of nickeliferous ore has been raised. Close to the main surface workings it is intended soon to sink another shaft to be known as Campbell's. The number of men employed in underground working varies from 16 to 20, and the total force employed by the company is from 80 to 100.

Air compressor rock drills are used in the underground workings. The company was engaged in the erection of a smelting plant, which was expected to be in operation in about two months' time, of about 60 tons capacity in 24 hours. At this time I made a careful inspection of the mine and am pleased to state that it is worked in a safe and workmanlike manner. In December I found the smelter completed, and the company has erected two large cupolas and the necessary plant for working them. There has also been erected and will soon be in full operation a plant for concentrating the nickel matte direct from the cupola furnaces. I am informed that since the erection of these

blast furnaces the company has sent to England about 370 tons of matte, where it will be subjected to the process of refining. At present writing I am not in a position to describe in detail the smelting and concentrating process of the company.

The mining operations have been considerably extended since August. The Vivian shaft has been sunk 40 feet below the 60-foot level, and I am informed that it is intended to extend it 120 feet below this point, and thence to extend levels north-east and south-west on the course or strike of the deposit. A large quantity of ore has been taken out of these workings of about the same quality as that before described. Many improvements have been made in the erection of workmen's cottages, and I am informed that several more will be constructed for the use of the miners and smelters. A good dwelling has been built for the manager and an excellent laboratory has been provided.

Dominion Mineral Co. The Blezard mine is situated in the township of Blezard, five and a half miles north-east of Sudbury, and is owned by the Dominion Mineral Co., with offices in Montreal and Sudbury. The company was formed in June, 1889, with capital stock of $250,000, afterwards increased to $500,000, and it owns altogether about 5,000 acres of land. Work has been vigorously prosecuted since the formation of the company. Shafts 1, 2 and 3 are sunk to the depth of 69 feet to the first level, from which there has been taken 50,000 tons of ore. A number of stopes have left the opening or excavation in an irregular form about 150 by 175 feet at the bottom, and extending upwards to within 18 to 22 feet of the surface. The rock roof is well supported by four large pillars of ore, No. 1, 22 by 22, No. 2, 24 by 16, No. 3, 18 by 24, and No. 4, 22 by 24 feet.

In shafts 1 and 3 safety cages are used for hoisting ore. Shaft No. 1 is sunk to the still greater depth of 70 feet from the first level. In this second level large quantities of ore have been stoped out, the average being 160 tons per day. Well secured ladders in the shafts, properly walled off by timber and plank, are used by the workmen to go in and out of the mine. The ore is hoisted on iron cars holding a ton each, made to fit the cages, and when landed at the mouth of the shaft the cars are conveyed by a tramway a distance of 125 feet to the large "Blake and Marsden" crusher. When crushed the ore is separated into three sizes by the rotary screen and loaded into dump cars and hauled to the roast heap by means of a locomotive. Eight air-compressor rock drills are used day and night in the mine. The total force of men employed by the company reaches 350, 125 of whom are engaged on the underground workings.

The roast heaps, which are about thirty, are designated by numbers, and contain about 1,100 tons of ore each. Some 40 cords of wood are required to complete the roasting of a single bed, occupying about ten weeks. When roasted the ore is conveyed to the smelter and dumped into bins on the charging floor at the mouth of the furnace, and after being weighed on the automatic scale it is shovelled into the water-jacketted furnace together with a suitable quantity of coke. Sufficient material is found in the ore to constitute the necessary flux. Herreshoff's patent furnace, manufactured at Sherbrooke, Que., is used, and about 135 tons of ore are treated in 24 hours. The matte averages about 27 per cent. nickel and about 12½ per cent. of copper; the residue is counted of no commercial value. The output of matte has reached the large quantity of 2,500 tons since the smelter was blown in, which was in April last. It is put into barrels and shipped to the market. In December about 30,000 tons of ore were on hand not smelted.

The buildings and plant, in addition to a large laboratory, consist of shaft houses, rock house with engine house attached, compressor buildings in which are three engines, dynamo engines, one large Blake crusher and a spare vertical engine, with other necessary appliances.

In the blacksmith department two forges are used day and night. In the smelter there is erected a large water tank holding 18,000 gallons to supply the furnace, and a number of bins are also provided for storing coke, ore, etc. The coke house holds about 800 tons. For the engine and blower also a suitable building is provided.

About fifty dwellings have been erected for the accommodation of the workmen, and a large comfortable private residence is occupied by the manager.

Electric light is used in the principal buildings as well as in the mine. This is the only mine in the province in which this new appliance has been introduced, and for convenience, safety and economy it may be recommended for use in the larger mines. The offices and mines are connected by the telephone system.

This company is also working with a force of 25 men the Worthington mine, which is situated in the township of Drury about 35 miles from Sudbury, on the Algoma branch of the C. P. R., and quite near to the track. A number of test shafts have been sunk, the deepest reaching 60 feet. A considerable quantity of ore has been taken out and it is found to be exceptionally rich, running from 8 to 42 per cent. in nickel. The ore from this mine is put in barrels in its raw state and shipped direct to the market. A good boarding house has been erected for the accommodation of the workmen and a comfortable residence for the foreman.

On the company's property several other valuable deposits have been discovered, but yet remain undeveloped. A good supply of water is obtained at both the Blezard and Worthington mines from running streams. George Attwood, F.G.S., of London, England, is consulting engineer, and the general management of the work is in the hands of Mr. John Ferguson, late of North Bay.

Other Locations. Many valuable mineral deposits, especially of copper and nickel, have been discovered in the townships of McKim, Blezard, Neelon, Snider, Waters, Creighton, Graham, Denison, Drury and Nairn, and also in some of the more northerly and westwardly of townships. On a number of these locations considerable prospect work has been done, indicating the large store of wealth to be realised as the work progresses. During the coming summer months it is expected that mining operations will be carried on extensively throughout this district and especially in the vicinity of Whitefish and Nickel City, where reduction works are likely to be operated.

TESTS OF NICKEL STEEL.

Mr. F. L. Sperry, who has made a reputation as an analyst and the discoverer of a new mineral bearing his name, and who is employed as an assayist in the large laboratory of the Canadian Copper Company at Copper-cliff, has at my request furnished the following memorandum on the history, supply and uses of nickel:

"In reviewing the mineral production of Ontario for the year 1890, there has been no metal which has brought the province so prominently into the front rank in mineral resources as the development of the nickeliferous areas of the Sudbury district. The mineral that carries the nickel is magnetic pyrites of iron, properly called pyrrhotite. Magnetic pyrites in a pure state contains 60 per cent. of iron and 40 per cent. of sulphur; but most all pyrrhotiferous areas contain some nickel, varying from 0.3 to 7 or 8 per cent. The Sudbury deposits carry nickel to the amount of $2\frac{1}{2}$ and $3\frac{1}{2}$ per cent. on an average. Some properties have been prospected which did not contain more than 0.6 per cent. nickel, so that it can be stated that all the pyrrhotiferous deposits of the Sudbury district do not contain sufficient nickel to pay to develop them. The New Caledonia nickel mines, on the island of New Caledonia in the South Pacific ocean, the Gap mine in Pennsylvania, and a few isolated mines in Norway and Hungary are the principal sources from which the supply of nickel has been drawn, and the most productive and important of all of these is the New Caledonia mines. The ore is a hydrous silicate of nickel called Garnierite, which contains about 10 per cent. nickel, with no sulphur. It is operated by a French syndicate. The extensive character of the Sudbury deposits is altogether greater than any of these locations, and their nearness to railroad and navigation centres will help them to be worked on a very economic basis. Some idea of the magnitude of the working here can be formed when it is known that the product of the Canadian Copper Company's property for one month would keep the American Nickel Works in Camden, N. J., running for sixteen months to their fullest capacity. At the present time three companies are prominently interested in the Sudbury region. The Canadian Copper Co. of

Cleveland, Ohio, first started operations here in 1886. They were followed by the Dominion Mineral Co. of Montreal and London, Eng., in 1888. The H. H. Vivian Co. of Swansea, Wales, started work also in 1888; so that there are four furnaces, five hundred men and five million dollars of capital represented in the Sudbury district today.

"Bergman was the first chemist who succeeded in separating nickel from copper and discovered it to be a new metal, in 1774. The name is of Swedish and German origin, abbreviated from Kupfernickel—copper of nickel or nicholas—a name that was given it in derision on account of its refractory nature in smelting. It is a lustrous silver-white metal, is very hard, and takes a fine polish. It may be rolled into thin plates and drawn into wire. It is malleable, and can be welded, and is not easily oxidized. It is attracted by the magnet, and readily assumes a polar condition. It has nearly the same specific gravity as copper.

"The governments of Switzerland, United States, Brazil, Germany, Belgium and Jamaica have adopted a nickel coinage for their small coins.

"German silver is an alloy of nickel, copper and zinc, in which the proportion of nickel varies from 13 to 31 per cent.

"Nickel alloys well with iron, and forms a nickel steel that has remarkable properties. A bar of steel alloyed with nickel recently tested in Pittsburg gave the following results:

Elastic limit, tons per square inch	92.02
Tensile strength " " "	153.35
Elongation in 2 inches	.05
Per cent. elongation in 2 inches	2.50

"The exhaustive experiments the United States Naval Bureau is now conducting prove that the good qualities of nickel steel may be turned to account in war vessels, for projectiles, guns, engines and machinery, and especially for armor plate.

"The trial of the armor plate was most severe. A six-inch cannon, made for the occasion, discharged four shots at three targets at a distance of thirty feet. One target was made of all steel, one of nickel steel, and one of composition plate made of hard steel face with wrought iron backing—the armor that the English battle ships are clad with.

"In the test of the all steel plate the first shot penetrated six inches, remaining fast in the hole; the second shot penetrated nearly through and rebounded twenty-five feet; the third shot penetrated just through the plate twelve and one-half inches, and rebounded, and the fourth shot penetrated twelve and one half inches, the point of the shell remaining in the plate, and the base of the shell rebounded. The plate was not cracked.

"With the nickel steel plate, the first shot penetrated to the back of the plate, the projectile breaking, and the base rebounded; the second shot penetrated fourteen and one-half inches, the projectile remaining in the hole; the third shot penetrated thirteen and one-half inches, the shot remaining in the hole; the forth shot penetrated thirteen inches without cracking the plate, the projectile broke and the base rebounded.

"With the steel and iron compound plate, the first shot passed completely through the plate, and the face of the plate was cracked and splintered three inches deep about the hole; the second shot passed through the plate and the lower half of the plate was badly wrecked, the projectile breaking; the third shot passed through the plate and set the backing on fire; while the fourth shot penetrated both plate and backing, and tore off some 300 pounds of metal.

"The trial was concluded by firing one shot at the center of each plate from an eight inch gun, the projectile weighing 210 pounds, and the charge of powder 85 pounds.

"The first shot was fired at the all steel plate, the projectile penetrating ten and one-half inches of steel and four and one-half inches into the oak backing, and rebounded, breaking into three pieces. The plate was cracked into four pieces, the cracks radiating from the center hole made by the eight inch shot to the four holes made by the six inch projectiles.

"The shot at the nickel steel plate penetrated the plate and passed six and one-half inches farther into the oak backing than the shot into the all steel plate. The point of the projectile remained in the hole, while the base was scattered in all directions, but the plate was not cracked in any direction.

"The final shot was fired at the compound plate. The projectile passed entirely through the plate and backing, and penetrated fifteen feet into the earth mound back of the target. The steel face was torn off and the wrought iron back of it was cracked in all directions.

"The result of the trial showed that the projectiles penetrated farther into the nickel steel than into the all steel plates; but the former were not cracked in any place, nickel steel being softer and tougher and better adapted for armor plating than all steel plates.

"Recent trials have been made by subjecting the nickel steel plate to a freezing mixture at a temperature of 28° to find if it was made brittle. In the trial the plate was cracked after being shot at six times, but the projectiles failed to pass through the target.

"The result of these trials has been so satisfactory to United States authorities that the government has appropriated $1,000,000 with which to purchase nickel for the navy.

"The coming year 1891 will witness trials by the government of the United States of nickel steel armor plate made in the United States.

"Apart from the great field that the manufacture of nickel steel is destined to fill in armoring the battle ships of the world, nickel alloys with other metals are coming into greater multiplicity of uses, among which might be mentioned nickel watch cases and nickel cooking utensils.

"The United States used over 800,000 pounds of nickel in 1890, and over half of this amount was imported.

"In 1891 we expect to see the Sudbury district called upon to supply this deficiency, and the necessary railroad facilities given to these Sudbury mines that seems so imperative for their development."

IRON.

It is a matter for serious consideration and regret that the extensive iron mines are in a state of idleness. Only one of them was worked during the year on a scale sufficiently large to admit of shipping ore, and this one has shared the fate of the others in having to suspend work.

Eastern Ontario. From the Williams mine, which is situated three miles from the Madawaska station on the Kingston and Pembroke railway, and two miles from a siding on the track, has been shipped a quantity of ore. In June last, at the time of my visit to this mine, work had been carried on for the eleven months previous with a force of from 25 to 30 men, during which time about 12,000 tons of good magnetic Bessemer ore had been taken out. The average of 65 tons per day was then being raised and carefully sorted and washed before it was carted to the siding, to which a good waggon road had been made. About 7,000 tons of ore were on the dump at the siding, ready for shipment, averaging a grade of 65 per cent. A vein of ore 15 feet wide had been opened for a considerable distance on the surface, and the principal workings had reached a depth of 100 feet on an incline of 30° west. The hanging wall is quartzite, and well supported by pillars which had been left; the foot wall is limestone. Steam power was used for hoisting the ore on an incline tramway and for running the drills in the mine.

A large number of iron mines have been worked extensively in former years which are now shut down, as the duty of 75 cents per ton on all iron ore shipped into the United States prevents their being successfully operated for shipping purposes. Were this prohibitory tariff removed it is likely that work would be quickly resumed at these rich mines and assume immense proportions. Besides those already opened, extensive new

iron ore beds would be uncovered and largely operated throughout the counties of Hastings, Addington, Frontenac, Renfrew, Leeds, Grenville, Lanark and Carleton. The districts of Muskoka, Parry Sound and Nipissing would also find an outlet for their high grade ores now locked up in these extended iron ranges.

Several gentlemen largely interested in the development of the iron industry of eastern Ontario have suggested that test borings throughout the principal ore occurrences in the magnetic bearing formation in that district are a necessity to determine the extent and value of such ores. The *Iron Age*, the leading journal of the American iron trade, in commenting on the report of the Ontario Mining Commission, suggests that the quantity and quality of our eastern ores have not been demonstrated to the satisfaction of American investors. This opinion, though controverted, is still current with our American neighbors, and no answer so conclusive can be given as proper tests conducted by a competent expert in deep drilling in the magnetic deposits. The results, it is contended, would be invaluable to the investor as well as to science.

Sir Richard Cartwright, who has made the iron question one of long and special consideration, gave to me the following as his view on this matter.

"As far as I can form an opinion I am inclined to believe that the very best thing the Government of Ontario could do would be to secure the services of a thoroughly competent Swedish mining engineer or iron master, and get this gentleman to devote some months to the study of the mines of eastern Ontario. I think most of the Swedish iron furnaces work on charcoal and often with the assistance of water-power, and that the surrounding conditions found here more nearly resemble those existing in Sweden than anywhere else. The Government would then be in a position to decide whether they would grant any public funds to promote developments, or what other steps they would take."

Should the experiment of boring show favorable results, it was further urged by several gentlemen that it should be followed by the erection of a small plant to treat say 5 or 10 tons of ore per day, with a converter to make a small quantity of steel daily, and thus demonstrate the fitness of the ores to be manufactured into the different classes of iron and steel required for use. The surrounding conditions, it is argued, are favorable for such test works. Water-power is abundant in the immediate vicinity of the mines, charcoal could be obtained cheaply, and there is railway accommodation on every side. The management could be placed in the hand of a competent expert from Sweden or elsewhere and the term of experimental operation extended over a period of five years. If successful, capital would then no doubt be invested for the construction of smelters on a large scale, and new life would be given to the iron industry of the province.

North-western Ontario. The recent and thorough prospecting done in the districts of Thunder Bay and Rainy River has determined beyond question that wide ranges of high grade ore abound, which must become in the near future a source of great wealth to this part of the province. In July last I met a number of gentlemen largely interested in the iron deposits of western Ontario, who from their personal explorations of the leads, and frequent tests both of kind and value of the ores, enabled me to form a tolerably fair view of the iron ranges in these districts. I procured a recently published map of the districts west of Port Arthur, prepared by Messrs. Russell & Co., of Port Arthur, from their latest surveys as land surveyors and mining engineers, and tracings were made upon a couple of these maps showing the direction and extent of the iron ranges. Mr. Richard R. Paulison, of Port Arthur, has kindly given a description of these ranges as indicated on the map, the general accuracy of which is borne out by the testimony of several other gentlemen acquainted with the deposits there. He writes as follows respecting the Mesabi—the extension of the celebrated Vermilion and the Attik-okan ranges :

"The second red line to the northward is known as the Gunflint, Arrow and Whitefish lakes range, being a continuation of the Mesabi range, and so far has been traced in Minnesota from a point about six miles south-west of the north of Gunflint lake, and passes north-easterly north of Gunflint, Arrow and Whitefish lakes and north of the townships of Kaministiquia station on the Canadian Pacific railroad. The geological formation on this range is highly favorable for the opening up of enormous iron deposits of good merchantable quality, as has been evidenced by the finds already made. The

deposits on this range are almost horizontal, with a dip to the south. On this range, six miles across the boundary in Minnesota, the Milwaukee Iron Company opened up their property by trenching and with diamond drill, and as their formation is precisely similar to that north of the lakes mentioned above, the result they obtained may be interesting and is about as follows :

"On the surface they had to go by the geological formation almost entirely, and after throwing aside about six feet of alluvium and rock they uncovered six feet of high grade Bessemer ore. Passing through this they struck eight feet of mixed up rock and jasper and iron, and then went through fifteen feet of solid high grade ore, carrying 5 per cent. of manganese. The same indications have been found at the west end of Gunflint lake, and so on every three to five miles north-easterly to Kaministiquia station. In my opinion this is the most accessible range, and should have the active co-operation of the Government to assist in opening it up by means of liberal assistance to the Port Arthur, Duluth and Western railroad, now under construction through it, and by the opening up of the range north and south of the railroad by means of colonization waggon roads. And further, the resources of the Government should be centralised at this point, so that the nearest deposits to Port Arthur can be opened up and shipments made in competition with American ores.

"The third red line to the northward is the continuation of the famous Vermilion range, and has not been explored beyond Hunter's island ; but the deposits are supposed to continue on through Shebandowan lake, and so on north-easterly. The most northerly range so far located is known as the Seine and Attik-okan range, and numerous discoveries are being made at this point. The deposits on this range are very apparent on the surface and the ores are of a high merchantable quality.

"The deposits on these three upper ranges contain hematite and Bessemer ores, used exclusively in the manufacture of steel, and are commonly called steel ores."

APATITE OR PHOSPHATE OF LIME.

Phosphate mining extends over a wide area in eastern Ontario, but it has been confined chiefly to surface openings ; the deeper workings with the exception of a few places have not proved entirely satisfactory.

BURGESS. On lots 3 and 5 in the 8th concession of the township of Burgess work is being conducted under the management of Mr. Robert Cordeck with a staff of 16 men. From three to four tons of 80 per cent. phosphate were taken out daily and hauled into the town of Perth, a distance of six miles, and shipped on to Montreal for the English market. This is an old mining region, operations dating back thirty years, during which time not less than 25,000 tons have been marketed. Deep mining with the aid of machinery had been tried but was abandoned. Small veins or leads are followed which often open into branches or pockets of ore. These surface workings extend over a considerable space ; the deepest on which work was being done, when I was there in December, did not exceed 40 feet.

LOUGHBOROUGH. The Sydenham Mica and Mining Company owns a phosphate property on lot 15 in the 7th concession of Loughborough, one mile north-east of Sydenham lake. This mine was opened in June to a depth of 20 feet, with 10 men employed, and there were 75 tons of phosphate on the dump. In December 30 men were at work, and the pit had been opened to the depth of 50 feet and 15 feet wide, and in length about 150 feet. Over 700 tons of high grade mineral had been lifted, valued at not less than $10,000. Hand drills were used, and a whim for hoisting. A part of the workings were in broken formation, which required additional timbering for the protection of the workmen. The timber had been brought on the ground, and a force of men were to be immediately put on in placing it. Captain John Harris superintends the work. A good blacksmith forge is erected at the mine, and the boarding house at the mica mine is used for the accommodation of the men. The company has a small tug for carrying the phosphate and mica across the

lake in the summer season. Mr. Lacey directed my attention to a district 15 miles square, on the north-east side of the lake and contiguous to it, rich in phosphate, but which could not be successfully worked for the want of a road. He stated that if a small grant of $1,000 were made by the Government to aid in the construction of a bridge across the narrow stretch of water known as Eel lake a sufficient additional amount would be provided by the municipality and private individuals to complete the bridge and build the roads. This whole region would then be accessible to the market and the phosphate deposits would be developed.

The Foxton mine is 18 miles north of Kingston and 7 miles from Sydenham. In December 30 men were employed under Captain F. I. Gorman, who has had over a dozen years of experience in managing mines and who assumed charge of the work here in July last. The shaft, or pit rather, 10 by 12 feet at the suaface, has the shape of a bottle, is widened out to the extent of 40 feet at the bottom, and is 185 feet deep. A part of the opening is walled off, in which ladders are placed for the purpose of going in and out of the mine. Although hazardous, I preferred the bucket descent. Last year a poor fellow lost his life this way, for, becoming dizzy, he let go his hold and fell 100 feet. In this opening there are two levels, one 55 feet and the other 105 feet from the surface. The former is extended 25 feet; the other is extended to a greater distance, and in it the principal part of the work was being done. Thirty tons of 77 per cent. phosphate was the weekly output. The product of the mine since June has reached 400 tons, of which about 275 tons had been hauled to Kingston at a cost of $2.75 per ton. The plant, which is ample for the use of the mine, cost $8,000; steam drills are in use. A shaft and boarding house have been erected.

The Kingston mine is half a mile south of the Foxton, and is worked under the same management. Fifteen men have been employed at this mine since it started late in the fall. About 75 tons of high grade red apatite have been taken from the three pits worked. The work for the winter will be confined to the Concession pit, which is but 400 feet from the Foxton. From present indications this property will be a productive one.

The Drummond mine, which was opened up in October last, is on lot 12 in the 8th concession of Loughborough. Four pits have been opened from 15 to 30 feet deep, and they have yielded 30 tons of red and green phosphate, averaging 87 per cent. as tested by Prof. Donald of Montreal. Over twenty surface indications appear on the lead, and every convenience is offered for mining on a large scale. The steam drill will soon be in use. Mr. John J. Drummond has the oversight of the property, and Mr. John Boulton is the foreman in mining. There is also a mica deposit on this property which may be mentioned here. From four to five tons have been taken out and placed in store at the mine.

Bedford and Hinchinbrook. The Frontenac phosphate mine is on lot 31 in the first concession of Bedford, and is under the management of Mr. T. S. Hampton, who resides at the mine. Prospecting work has been carried on since May last. From one pit 40 feet deep about 15 tons of phosphate had been taken out, reaching an average grade of 85 per cent. Another pit had been opened to the depth of 50 feet with a level 40 feet from the surface, from which 30 tons of similar grade was obtained. This drift extended 20 feet. Work will be continued throughout the winter. Steam power is used for hoisting and will be used for drilling. Fifteen men are employed besides the manager. The phosphate is taken to the Kingston and Pembroke Railway over a good road one-fourth of a mile. Mr. C. J. R. Sterling, of Kingston, is the managing director of this mine. He is also owner of a phosphate and mica property in Loughborough, near to the Foxton mine, at which 10 men are at work, and a couple of tons of phosphate with some amber mica are taken out daily.

The Blessington Mining Company own the Eagle Lake, St. George Lake and Silver Lake mines. The Eagle Lake mine is two and a half miles from Parham station, on the Kingston & Pembroke railway. It has been worked for the past five years, and now employs 50 men. The property comprises 800 acres, 400 in each of the townships of Hinchinbrook and Bedford, lying side by side. There are four pits opened, three of which reach the depths respectively of 150, 135 and 75 feet. From these workings the

yield has been 600 tons during the summer, of high grade, besides the "seconds" shipped to the United States. The high grade is sent to the European markets. The working force has been lessened for the winter, the present output averaging six tons daily. Air compressor drills will soon be used, which will largely add to the product of the mine. On this property is found a valuable magnetic iron deposit which is mingled with phosphates. The two ores are often found in the same vein and mined at the same time. In other places the phosphate is capped with iron ore to the thickness of three or four feet, and when stripped the phosphate is found in pure red crystals, from twelve to thirty inches wide. There have been erected engine, boiler and cobbing houses, and sixteen dwellings for the use of the miners. Near by on the property is a sawmill from which the company supplies the lumber for its own use, and it has on hand in addition about a million feet for the market.

In June, when at the St. George Lake mine, 20 men were employed, with W. H. Walker as foreman. Two pits were opened, each about 100 feet in length, uncovering a vein of four feet in width, with dip of 60° west, and had reached the depth of 40 feet through an irregular formation of granite and limestone. In places the phosphate was found in regular layers, and at the bottom of the pits of a higher grade. About 800 tons of 80 per cent. grade had been taken out. Two steam drills were used, and a whim with steel cable for hoisting. In December the yield of this mine had reached 1,500 tons, and the work had been largely extended. This property comprises 200 acres, held in fee simple. The property of Silver Lake mine covers 200 acres held in fee simple and 325 acres in mineral rights, and is located five miles east of Sharbot lake on the Canadian Pacific railway, where a siding is being put in. From the prospect work 300 tons of phosphate of 82 per cent. have been obtained, and immense quantities uncovered. The openings have been made from 10 to 50 feet apart, stretching across the property for the distance of a mile. It is estimated that several thousand tons will be mined during the coming year. Steam power will be used for drilling. The Eagle and St. George Lake mines are within half a mile of good sidings on the railway, and with the convenient roads the phosphate is hauled from the mines to the railroad at 17 cents per ton. These properties are owned by Captain Boyd Smith, who usually spends part of the summer at the mines. The manager is Mr. James Harris, who has been engaged in mining for 27 years—the earlier part of the time in the Cornwall mines in England and the iron mines in Wales. For fifteen years he has been connected with phosphate mining in Loughborough and for half of that time with Captain Boyd Smith. Only one slight accident has occurred at the mine during this period.

BARYTES.

When at Fort William in August last Mr. Peter McKellar gave to me the following description of barytes mining on McKellar island. He stated that the Cincinnati Barytes Co. has leased for a term of twenty years a mine which is situated on the island owned by the McKellar Island Silver Mining Co. About 1,000 tons of barytes is taken out monthly, shipped to Cleveland and used in the manufacture of paint.

The mine is worked on a royalty of 40 cents per ton. This new enterprise in Ontario mining is due to the exhibit of Canadian minerals at the Cincinnati Exposition, where a specimen of this mineral attracted the attention of American capitalists, who afterwards examined and leased the property.

Mr. W. S. Morris in his evidence before the Commission says: "Barytes occurs in Bathurst, North Burgess and North Crosby. In Oso I have seen a perfectly pure vein three feet wide. I have seen it also in good workable veins in North Crosby."

MICA.

The Sydenham Mining and Mica Co. (Limited) own the property known as the Smith and Lacey mica mine, the largest mica mine in the province. It lies 18 miles north of Kingston, on the border of Sydenham lake and 7 miles from Harrowsmith station on the Kingston and Pembroke railway. In June 25 men were working underground and 10 on outside work. The mine was well equipped with machinery, a 30 h.p.

engine, air compressor drills, a convenient hoist and ample storage. The shaft was sunk to the depth of 160 feet, and since has been extended 15 feet lower. Two drifts were opened from the shaft, from which a large quantity of mica has been stoped. The mica is taken across the lake on a small steam tug in the summer and hauled on the ice in the winter to the cutting works at Sydenham, a distance of 4 miles. In December the mine was shut down, with 150 tons of amber mica on hand. Mr. Lacey informed me that the McKinley Bill had seriously interfered with the mica industry. He said: "Thirty-five per cent. duty is more than it can stand. Our mine, which had a yearly out-put of some $30,000, has been shut down since it came in force. Give us free trade with the United States." This company also owns and works mica properties on lots 5, 6 and 7 in the 6th concession of Effingham, also on several lots in the township of Abinger, both in the county of Addington. From some of these mines for the past three years a quantity of pure white mica has been obtained for which there has been a constant demand. A large quantity has gone into consumption not only in Canada but also in the United States. About a dozen men are now employed at these workings.

The mica property on lot 8 in the 9th concession of Loughborough is owned and worked by the Gould Lake Mining Company. The shaft or excavation has reached the depth of 70 feet, and the yield has enabled the company to make several shipments during the past two years. Their cutting works are at Sydenham.

For the Perth mica mines see the Mining Commission's Report p. 48. This mine, with some other mica properties, I did not wait to visit.

The mica industry in Ontario was assuming large proportions when checked by the high tariff wall. The tabulated list of minerals showing the products of Canada and the United States for 1888 given in the Commission's Report, p. 525, places the mica product for Canada at 29,025 lb. and that of the United States at 40,000 lb. For each of the two years past the Ontario mines alone have yielded a larger quantity than these figures show for the year 1888 for the whole Dominion, while a considerable part of the product has been equal in quality to any obtained on the continent.

MARMORA.

When in Marmora I visited a lithograph quarry owned by William Kelly, situated on the brink of the Crow river, which he regards as very valuable; near by it were the ruins of a plant which was constructed by an American company in former years for working it. Mr. Kelly stated that he held a first prize medal and a diploma, obtained at the Centennial Exposition held in Philadelphia in 1876, and another from the exhibition at Sydney, Australia, in 1887, for lithograph stone taken from this bed. Some of the blocks were of huge size, one measuring over 48 by 60 inches and 14 inches thick. There is an immense quantity in sight and the color is light drab or buff. It is the heaviest of all stones, is neither affected by wet nor frost and is said to take on a beautiful finish. I did not visit the lithograph property on lot 8 in the 5th concession of Madoc, where an area of 20 acres is covered with the stone. See Commission's Report, p. 57, evidence of D. E. K. Stewart.

We went over lot 12 in the 2nd concession of Marmora, where there is an iron belt, the ore cropping out for over half a mile and several hundred feet in width. This property is near to the small Marmora lake, the Canadian Pacific railway running near by on the opposite side of the lake. On lots 15 in the 1st concession and 19 and 20 in the 2nd concession we examined ranges of magnetic iron ore. Mispickle ore crops out in several places. On lot 8 in 5th concession of Lake township a vein of asbestos may be traced on the ledge for a quarter of a mile, the mineral jutting up through the rock several inches in width. On the same lot we were shown some fine marble, both white and pink.

Graphite in considerable quantities is found on lot 20 in the 5th concession of Marmora. Mr. Edison, when at Marmora late in 1889, examined some specimens from this property, and he regarded it as excellent graphite.

The extensive and various mineral deposits of this region will doubtless at an early day yield satisfactory returns to the investor of capital judiciously expended.

MICHIPICOTEN.

In reply to my inquiry, late in December, respecting the mining operations on Michipicoten island during the year, Mr. Joseph Cozens of Sault Ste. Marie writes: "With regard to the mining work done on my Michipicoten island property the past season, I did nothing on the amygdaloid lode, on which I have a shaft 525 feet deep, beyond pumping out the mine, putting the pumps, ladders, skip-wood, etc., in thorough repair, and having the mine examined by an expert with a view to extensive working during the coming season. My chief work was done on a conglomerate lode near the west end of the island. This lode averages from 6 to 8 feet in width, with an amygdaloidal hanging and sandstone foot-wall, and has a pay streak of over 2 feet, averaging from 4 to 5 per cent. of native copper. On this I have sunk a shaft about 65 feet deep, and have tested to a depth of over 200 feet with the diamond drill. At this depth the whole of the lode carries heavy copper. I had about eight men employed, and anticipate working a very much stronger force next year."

SCHOOL OF MINES.

From many quarters in the province the question of a school of mines came up for discussion. In June, when in Kingston, I had an interview with Mr. J. Bawden, barrister. His practical experience with the mines in eastern Ontario for over twenty years and his broad acquaintance with the methods of treating various classes of ore fit him to speak with a degree of authority on this matter. The question was discussed to some extent in the evidence which he gave before the Mining Commission in their report (see pp. 390 and 391); also notes on "Charcoal and Charcoal Iron," appendix H of the same report. He has recently placed at my disposal the following as his view of a plan for such a school:

"The site of the college should be chosen with regard to facilities for obtaining ores, fuel and power, and it should be easy of access from Toronto and Ottawa.

"The largest known deposits of iron ore in the province of Ontario east of Toronto are situated in the townships of Belmont, Marmora, Madoc, Barrie, Palmerston, Bagot, Darling, Lavant, Bedford, Oso, Sherbrooke, Dalhousie, North Crosby and Bathurst. Within the same area are found galena, iron pyrites, phosphate of lime and plumbago. It is a compact district traversed by the north and south lines of the Canadian Pacific, the Kingston and Pembroke, and the Central Ontario Railways.

"Two rivers, the Mississippi and Madawaska, affording enormous water-power near the K. & P. railway bridges, run through this district.

"The saw-logs manufactured into lumber on either river will alone furnish sufficient fuel for a 10-ton furnace. The utilization of the waste of the saw-mill brings into requisition the practical art of the gas engineer and the chemist.

"The by-products are of value in the manufacture of metallic compounds, as acetates of lead, copper and silver, etc.

"The conversion of hydraulic power into heat for metallurgic operations, as in the manufacture of aluminum and in electric welding, and in the use of powerful currents in the electrolytic deposition of metals from solutions of ores of low grade, indicate the great value of waterfalls where contiguous to supplies of ore and railway communication.

"The possession of a uniform 1,000 h. p. hydraulic motor, easy access to a variety of mineral ores, and a supply of cheap fuel either from the saw-mill or the forest, bring the student face to face with his work. Here is power for its various applications in the arts; here are the ores of the country presenting various qualities as to the most economic methods of reduction; and here is the cheapest source of fuel we have to offer.

"An institution which shall teach men practical metallurgy should have the following plant:

Machinery for breaking, separating and concentrating ore, with kiln for roasting.
A blast furnace of 5 tons capacity.
Oven for heating blast.
Open hearth furnace for the manufacture of steel, with Siemens' gas regenerator; also furnace for preparation of sponge.
Small Bessemer converter, one-half ton capacity.
Small rolling plant.
One puddling furnace, or a Lancashire Swedish hearth.
One cupola.
Charcoal kilns and gas making plant.
Reverberatory furnaces and cupolas for smelting lead and copper ores.
Electric plant for metallurgical purposes and for lighting.
Chemical and physical laboratory.
Class room and boarding house.

"The staff required will be—

Professor of metallurgical science.
Professor of chemistry and analyst.
Professor of physics and electrical engineering.
Mineralogist and professor of mining engineering.
Treasurer and secretary.

"The plant in detail would be of the minimum capacity for obtaining economical results.

"The blast furnace would be operated occasionally with cold blast, and at other times with hot blast.

"In steel manufacture the metal would be taken from the smelter to the open hearth furnace.

"The puddling furnace can be used for making muck-bar for the steel furnace, or for refining iron for the rolling mill."

With the details of the plant for treating lead and copper ores Mr. Bawden says that he is not sufficiently acquainted to offer an estimate, and suggests as to the whole plan and estimates of cost that the opinion of competent parties be taken, and he names several gentlemen with whom correspondence might be opened for this object. He also adds:

"The plant should be operated during the winter months only, with the exception of the assaying department. The professional staff, chemist excepted, should be engaged as a Mining Bureau in the field during the summer months, accompanied by any students desiring to engage in field work."

PORT ARTHUR, DULUTH AND WESTERN RAILWAY.

In reply to an inquiry made late in December of James Conmee, Esq., M.P.P., at Port Arthur respecting the extent of the work done on the Port Arthur, Duluth & Western railway and the influences which the road would have upon the mining industry of western Ontario, he says:

"The Port Arthur, Duluth & Western railway is now in operation from Port Arthur to Whitefish lake, that is, construction trains are being run over the road to that point. Construction is still going on, and it is expected that the road will be completed to the international boundary before the 1st of December next. This road, you will observe, passes through the silver mining district and into a portion of the iron district. It is expected that large shipments will be made of the products of the mines in the Canadian territory, and equally as large, if not larger, shipments will be made from the American territory. American ore will pass from the point where it is mined in the State of Minnesota over this road through Canada to lake navigation, whence it will reach the American market by water. I beg to call your attention also to the Rainy River railway, which is now under construction. The company has running powers over the Port Arthur, Duluth and Western railway from Port Arthur to the neighborhood of Iron Range lake, a considerable distance west of the west end of Whitefish lake. There it

branches off in a north-westerly direction, passing through Moss township on to Sabawe lake; thence it follows the valleys of the Attik-okan and Seine rivers to Sturgeon Falls; thence north of Vermilion lake and across the narrows of Rainy Lake to the neighborhood of Fort Francis; thence to the mouth of Rainy river, where it is expected it will join with the railways of the north-western United States. The company has now a large party under the charge of Mr. Zeph. Malhiot, chief engineer, engaged in completing the location of the line. This railway, after it branches off from the Port Arthur and Duluth railway, passes through a belt of iron lying south of Moss township. In Moss township it passes in close proximity to the celebrated Huronian gold mine. On the Attik-okan and Seine rivers are to be found some of the largest deposits of the finest iron ore on the continent of America. Much of this ore when tested yields as high as 70 per cent. of pure metallic iron. The tests disclose no objectionable substances. Titanium and phosphorus exist in very small quantities. Without the construction of the Rainy River railway the iron and gold deposits of which I have spoken will remain wholly inaccessible and of no value to the country. The company and its promoters are in hopes that within the next two years they will have thrown open this country to the mining world, by which time it is expected that there will be a ready demand for all the ore that can be mined along its route."

I have the honor to be, Sir,
Your Obedient Servant,

A. SLAGHT, Inspector.

APPENDIX.

TESTING ARMOR PLATES FOR UNITED STATES WAR VESSELS.

[From the Scientific American, September 27, 1890].

One of the most thorough trials of heavy armor plating ever made in this country was conducted at the naval ordnance proving ground at Annapolis, September 18. Three plates of foreign manufacture were tested, each plate eight feet by six, and ten and one-half inches thick. They were (1) a compound of steel and wrought iron plate, made by Cammell & Co., of Sheffield, England; (2) steel and nickel plate, the nickel alloy being about four per cent., made by Schneider & Co., of La Creusot, France; and (3) an all-steel plate from the same makers. The latter plate was similar to those now being made at the Bethlehem iron works for use on our new war vessels, and both that and the nickel steel plate proved themselves greatly superior to the Cammell compound plate, which has been used in the construction of the new English armor-clads.

The targets were arranged on the arc of a circle, with the gun in the centre, the muzzle of the gun being 28 ft. from the face of each plate, and the plates being set upright in a backing of heavy oak timbers, flanked on the sides by steel posts, all solidly bolted to the oak backing. The gun was a six-inch rifle, the usual length of which is 16 ft., but this gun had been specially made with a length of 17½ ft. to give the projectile a higher initial velocity. The initial speed of a 100 lb. projectile from a six-inch gun in the English trials was 1,976 ft. per second, but in these tests the initial velocity was 2,075 ft. per second, the chamber pressure being 15 tons to the square inch, using 44½lb. of powder to the charge. The projectiles weighed 100lb. each, and were made by Holtzer & Co., at Unieux, France; they were of forged steel with points of chrome steel, and each 17 inches long.

Four shots were fired at each plate, striking respectively in order near the right and left hand corners at the bottom and top. At the first shot on the Cammell compound plate there were many flying fragments, and the projectile went entirely through the plate and eleven inches into the backing, the metal around the hole being crushed into many small pieces, and the plate being considerably cracked. The second shot also pierced the plate and increased the size and number of the cracks, scaling off the steel face in places and wrecking the lower half of the target. The third and fourth shots on the upper part of the Cammell target were attended with similar results, the projectile each time piercing the plate, which was badly shattered and almost completely dismantled.

In the first shot at the all-steel plate the projectile imbedded itself in the plate to the depth of about 14 inches, its point just penetrating, but there were no cracks. At the second shot the projectile barely made a hole through the plate, and was itself forced back, falling to the ground. The third and fourth shots were similar, except that in the latter case the projectile was broken up. The first shot at the nickel steel plate barely pierced it, but the projectile was broken into fragments. By the second and third shots the projectile was almost entirely imbedded in the plate, but did not go through it, and by the fourth shot the projectile was broken up, its point having just pierced the plate, in which, however, no cracks were made.

Although further tests are to be made with the all steel and nickel steel plates, using an eight-inch gun, the compound plate was so badly damaged that it was decided not to risk any trial of it hereafter. The trial described was conducted under the direction of a board of officers, with Rear Admiral Kimberly as president, and Secretary Tracy was present, giving it his personal attention.

[From the Scientific American, October 4, 1890].

The remarkably short time it took for Congress, after the final results of the recent trials at Annapolis were made known, to make the large appropriation of $1,000,000 for

the purchase of nickel to be used in the manufacture of nickel steel plates for armoring our war vessels, is something phenomenal. The very great superiority of such plates over the English compound plates, such as is used on most of the armor-clads of the British navy, was so plainly shown at the trials as to admit of no question, but the superiority of the nickel steel over all steel was by no means so decided, and there appears at first to have been some difference of opinion on this point. On the final trial, however, when only one shot was fired at the centre of each of the plates from an eight-inch gun, the superiority of the nickel steel plate was plainly demonstrated.

The projectile used was an English Firth shell, having a tempered point and a softer base than the 100 lb. shells used in the previous trials. The first shot was fired at the all steel plate, which the projectile penetrated into the oak backing and rebounded, the shell being broken up. It had made in the plate a ragged orifice with splintered edges, and four narrow cracks radiated from the centre hole to each corner of the plate through the holes which had been previously made by the six-inch projectile. The next shot was at the centre of the nickel steel plate, which was penetrated, the shell burying its point therein, while the base of the shell was broken into small pieces and scattered in all directions. There were, however, no cracks in the plate, whose structure seemed to be uninjured, except where it had been struck by the five different projectiles. The last shot, and the fifth on the Cammell compound plate, broke the latter all up, penetrating both plate and backing, and scattering large and small pieces in all directions, while the projectile itself was apparently uninjured.

The result of these trials was to induce Secretary Tracy to make immediate application to Congress for the large additional appropriation, and it has been many years since a call for so large a sum for any similar purpose has met with so prompt and satisfactory a response. It is announced that the contractors for the armor plates have consented to introduce the nickel alloy, without change of contract, into all plates already not too far forward in process of manufacture to prevent this, and thus it is seen that one advantage of the very first importance has been obtained by the deliberation and thorough care thus far manifested in the construction of our new navy. The armor plates used thereon will be far superior to those already in plates on the armor-clads of all present war vessels. The question of alloying steel with nickel to give greater strength is not, however, a new one, for experiments in this direction have been conducted by prominent firms for some years past, both on armor plates and on gun barrels. The amount of nickel used in the Creusot plate recently tested is said to have been three and a half per cent., but it is by no means considered settled that this is absolutely the best proportion to use, and if it prove to be the best for armor plates it may not be the best for other uses. It is safe to say, however, that the trials so successfully conducted at Annapolis will give a great impetus not only to further improvements in armor plates but also to a corresponding progress in the manufacture of guns and projectiles.

[From the New York Engineering and Mining Journal, September 20, 1890].

The results of the tests made on foreign armor plates at the Annapolis proving grounds on September 18 by the United States Naval Board have more than a national significance.

The plates were three in number. A Schneider (Creusot) all steel plate, a Schneider nickel steel plate, containing between three and five per cent. of nickel, and a Cammell (Sheffield) compound plate. The latter is constructed of two sections, the steel face, which comprises one-third of its thickness, being welded on to a wrought iron backing. All were 10½ inches thick. The gun used was a modern high powered six-inch rifle, constructed expressly for the trial, 35 calibres (17½ ft.) in length. The 100 lb. projectiles used were manufactured in Unieux, France. They were made of forged steel, with points of chrome steel, and were 17 inches long. The initial velocity, using 44½ lb. of powder, with a chamber pressure of 15 tons to the square inch, was 2,075 ft. per second.

Four shots were fired at different points on each target. The Schneider all steel plate was penetrated by each shot, but in no case was it cracked. One of the shots was embedded, two rebounded, and the fourth was broken, a portion remaining in the plate.

The projectiles all penetrated the nickel steel plate with almost the same results which attended the tests of the all steel plate. The Cammell composition plate was shown to be utterly incapable of standing fire. The first shot went through the plate and into 11 inches of the backing, splintering the face around the point of entrance in a very irregular manner, and scattering fragments. The second shot resulted as did the first, and in addition badly cracked the plate. The third shot penetrated the plate and iron backing, setting fire to the wooden stays and causing additional cracking. The fourth shot passed through the plate and backing, causing the steel face to peel off like wood veneering.

In these tests the projectiles proved equal to the demands made upon them, consequently the comparative tests of the armor were complete. It was expected that under the conditions the projectiles would pierce all the plates, and the results shown by the two Schneider plates are highly satisfactory. The Cammell compound plate was a most complete failure. It is stated that many of the English battle ships are lined with this make of armor, and that thousands of tons of it are ready to be put on vessels now in process of construction. Just how English naval authorities feel over the results of the test can be more easily imagined than described.

[From the Engineering and Mining Journal, September 27, 1890].

The second stage of the Annapolis trial of armor plates resulted in still further establishing the superiority of the nickel steel alloy for such defensive work. The tensile strength of the nickel steel was such that though penetrated by the shots no cracks were developed in the plate. The all steel plate was divided into quarters by four cracks running from the centre hole to the holes made near the four corners and thence to the outside of the plate. The Cammell compound plate may be said to have been entirely broken up. The nickel steel alloy of which the plate was composed is said to contain less than four per cent. of nickel.

The question of a market for a largely increased production of nickel, which was so much questioned last year, and which we maintained was simply a question of price in connection with its application as an alloy with steel, may be said to be definitely settled by these trials, as in addition to the European demand to which we alluded at the time (Dec. 21, 1889) a Bill was introduced yesterday and immediately passed by the House of Representatives at Washington appropriating $1,000,000 to enable the Secretary of the Navy to buy nickel ore and nickel matte for use in the production of steel armor for the new armored cruisers.

SUPPLIES AND USES OF NICKEL.

Enquiry was made early in the present year (1891) by the Commissioner of Crown Lands through Sir Charles Tupper, High Commissioner for Canada at London, Eng., concerning countries in which nickel ores are found, the quality and quantity of such ores, the places where they are treated, the firms which have special works for treatment of the ores and manufacture of the metal, and the uses to which the metal is applied. Sir Charles referred the enquiry to Messrs. Reynolds, Carter and Reynolds, iron and steel merchants and engineers, of 18 St. Swithin's Lane, London, and in reply to the request that firm gave the following information :

1. At the present time nickel ore is found at Sudbury and New Caledonia, where the principal working mines are found ; in Oregon and Nevada and at the Gap mine in Pennsylvania and at Humboldt in the United States, where mines are still working, but on a small scale ; and in Norway, Sweden, Austria and Hungary, where mines for the present are mostly abandoned. The quality of those ores varies from one to twenty-five per cent.

2. The principal reduction works are in England, Germany and Austria ; there is also a refinery in the United States, and a small one in Norway.

3. The firms having special works for manufacture of the metal are Wiggin & Co.

and Vivian & Co. in England, Krupp in Austria, several German Government works and Joseph Wharton of Philadelphia.

4. Nickel is used to harden and whiten other metals. For instance, 25 per cent. of nickel with copper makes a beautiful white metal resembling silver, but much harder and more durable. It is also used for making white metals for electroplating, and for hardening steel and other metals; also for cartridge cases and numerous other articles.

Sir Charles Tupper informs the Commissioner that Mr. Thomas Reynolds of the firm from which the foregoing information was obtained is interested in the works of Dominion Mineral Company of Sudbury, which is engaged in mining and smelting operations there.

MINING STATISTICS.

Section 10 of the Mining Operations Act, 1890, provides that the owner or agent of every mine to which the Act applies (viz., every mine in which more than six persons other than the owner are employed under ground) shall on or before the first day of February in each year send to the Minister of Agriculture a return for the year ending on the preceding 31st of December of the number of persons employed in or about such mine above and below ground respectively, distinguishing the different classes and ages of the persons so employed whose hours of labor are regulated by the Act, according to a form prescribed by the Minister of Agriculture. The section also provides that every owner or agent of a mine who fails to comply with this requirement, or who makes any return which is to his knowledge false in any particular is guilty of an offence against the Act, and is liable as provided in section 18 to a penalty not exceeding $50 if an owner or agent, and if any other person to $10 for each offence. If an Inspector has given written notice of such offence the party guilty of it is liable to a further penalty not exceeding $5 for every day after such notice that the offence continues to be committed. In accordance with these requirements of the Act returns have been received for the year ending 31st December, 1890, for ten mines, the totals and averages of which are presented in the following table :

Schedule.	Silver.	Copper and nickel.	Phosphate and mica.
No of mines.	3	6	3
No. of workers above ground from 15 to 17 years of age.	4	16	11
Average wages of same per month. $	31.00	23.44	17.00
No. of workers under ground from 15 to 17 years of age.	—	3	—
Average wages of same per month. $	—	24.33	—
No. of workers above ground of 17 years and upwards.	65	376	34
Average wages of same per month. $	50.75	42.42	29.30
No. of workers under ground of 17 years and upwards.	100	194	52
Average wages of same per month. $	57.00	51.37	28:00
Mineral raised in 1890. Tons of 2,000 lb.	11,887	130,278	2,049
Output of mines sold, treated or used in 1890. Tons of 2,000 lb.	1,490	59,329	249
Value of mineral raised in 1890. $	336,000	1,323,676.74	39,500

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